Kaqchikel and Spanish Language Contact: The Case of Bilingual Mayan Children

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M.A., University of California, Los Angeles, 1992

B.A., University of California, Los Angeles, 1988

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BY I. HEINZE

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ABSTRACT

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This study examined the lexical and morphosyntactic knowledge of Kaqchikel Maya children in the Kaqchikel and Spanish languages. Eight bilingual children, who acquired Kaqchikel at home and Spanish at school participated in this study, whose main methodology was the elicited production method. The collection and recording of the data were conducted during three visits to Tecpán, Guatemala.

My inquiry into the lexical knowledge of these children showed that their lexicons were not twice as large as that of a monolingual. Generally, they knew more Spanish lexical items than Kaqchikel ones. All the children borrowed from Spanish to various degrees from core and noncore semantic domains. The children's bilingual lexicons were organizationally complex and fluid, e.g., lexical items in lexical pairs were polysemous. Other major findings are that L1 lexical items were subordinated to L2 lexical items and that Spanish loanwords in the bilingual lexicon undergo cycles of phonological and lexical change. Regarding verb morphology, it was found that the children were more productive at inflecting ergative case than absolutive case. Moreover, they were more productive at inflecting ergative singular prefixes than their plural counterparts.

The children were found to be at different interlanguage levels in Spanish, but generally they had better knowledge of accusative cliticization than reflexive or dative cliticization. An important finding is that the children's scores for both reflexive and dative clitics

increased with the number of years in school. The data demonstrated that the children acquired the properties of L2 verbs in stages and that they transferred the morphosyntactic properties of specific Kaqchikel transitive verbs onto their Spanish equivalents.

It was found that the younger the child was when she or he started school, the weaker this child was in Kaqchikel, while the older the child was, the stronger knowledge she or he had in Kaqchikel. Spanish and Kaqchikel dominant levels of bilingual competence were documented. The children with two years of school were Kaqchikel dominant, those between 3 and 5 years were Spanish dominant, while the one child with six years had reached a state of equilibrium in her levels of competence in both languages.

DEDICATION

I dedicate this dissertation to my beloved daughter Dahlia, as well as many children in this world, struggles to harmonize the pressures of two societies with two different cultures and two different languages. She, like the children of this study, lives under permanent sociolinguistic pressure to become bilingual to satisfy the demands of her family and the two cultures that she is a member of.

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Chapter I

Rationale and Background of this Study

Rapid progress has been made in the field of first language acquisition particularly since the 1970's (e.g., Bowerman 1973, Brown 1973, Ingram 1976, Snow 1977, among many others). However, much of this research has been conducted on the acquisition of English and other European languages, and much less in other languages; in particular, there has been a dirth of research in the acquisition of the indigenous languages of the American continent. Slobin (1991:1) pointed out that in the 1980's, English-language publications on child language were heavily anglocentric. For instance, the prestigious *Journal of Child Language*, founded in 1974, had devoted 80% of 'its data-oriented articles in the seventies to the acquisition of English'. The importance of Slobin's remark is that the journal's orientation was a reflection of the research that was being carried out, i.e., there was a strong focus on English and other European languages such as French, Spanish, and German, and the articles published by the *Journal of Child Language* reflected this trend.

According to Slobin (1991:1), the research on the acquisition of other languages improved somewhat, and between 1976-1990, the journal published articles on the acquisition of thirty-six non-indoeuropean languages. Of these languages, Mohawk and K'ichee' are native to the American continent. Of these two languages, two articles on the acquisition of K'ichee', a Mayan language, were published from 1974 to 1990. Nevertheless, according to Slobin (1991:1) by November 1990, 57% of the articles

published by the *Journal of Child Language* 'dealt with English alone'. Thus, this improvement has been slow, since I found that during the last decade two articles were published on the Inuktitut language, and one was published on both the Navajo and Quechua languages.

This state of affairs reflects how little research is being carried out on the acquisition of indigenous languages, generally. This situation is improving *vis à vis* the Mayan languages family, whose researchers include: Pye (1980), Garzon (1991), Brown (1998), and De León (1999). Still, much research on the acquisition of indigenous languages needs to be carried out. Researchers must continue to collect data and produce analysis about particular and general aspects of the acquisition of indigenous languages.

Concerning second language acquisition (L2), the focus of much of the research in the 1980's and 1990's has been on adult second language learners, and this research has been conducted particularly within the framework of Universal Grammar[1] (UG) as proposed by Chomsky (1981). Researchers have placed major effort in proving or disproving the various hypotheses regarding the availability of UG in adult L2 acquisition. In contrast to the adult L2 learner, the child L2 learner, i.e., the consecutive bilingual child has largely been ignored in UG-based research. Although this state of affairs is slowly changing as research has turned to linguistic issues such as code-switching in children and

[1] UG is a parameterized system that intends to explain how a child arrives at the grammar of her/his language in spite of insufficient and imprecise input, and to account for the diversity of human languages.

the availability of UG (e.g., Lakshmanan 1994), this trend differs markedly from that in the 1970s, when child second language acquisition was being actively researched.

In fact, the child L2 learner has been ignored not only by UG-based researchers, but also by researchers in the bilingualism field. The latter group has particularly neglected research on the knowledge of the consecutive bilingual child[2], and has turned to conducting research on the simultaneous bilingual child (e.g., MacLaughlin 1978; Padilla and Lindholm 1984, Taeschner 1983; De Houwer 1990; and Meisel 1990 among many others). Some of these researchers acknowledge that they arbitrarily neglect the study of consecutive bilingualism; for instance, Romaine (1995:182) stated the following:

> I will have less to say about 'consecutive' or 'successive' bilingualism since I consider that to belong to the field of second language acquisition. This decision is, of course, arbitrary, but the field of second language acquisition has been much written elsewhere...

While scholars in the fields of second language research and bilingualism have neglected the study of the child L2 learner, researchers in the field of language contact

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[2] Hamers and Blanc (2000) proposed that to be considered a consecutive bilingual, a child should acquire L2 before the age of five, but after she/he has acquired the basic skills in the mother tongue. On the other hand, Romaine (1995) defines a consecutive bilingual as the child who has acquired the basic skills for both L1 and L2. In contrast, the simultaneous bilingual child is considered to have acquired two languages (LA and LB) from the onset of language.

have conducted research on both the L2 adult and child learners, especially, those of immigrant communities (e.g., Amastae and Elías-Olivares 1982; Roca and Lipski 1993; Silva-Corvalán 1994; Zentella 1997; among many others). This research has focused, rather than on L1 and L2 acquisition, on issues of language shift and loss, as well as particular grammatical aspects such as lexical borrowing and code-switching. Moreover, language contact research in indigenous communities and children has also focused on questions of language maintenance and shift (e.g., Garzon 1998).

In conclusion, research on the consecutive bilingual child, particularly the indigenous consecutive bilingual child, has been neglected. The field of L1 acquisition has focused on the acquisition of English and other European languages, while studies on L2 have focused on adult learners. Studies on bilingualism have focused on the simultaneous bilingual child, and language contact studies concentrate on investigating language maintenance and loss, mostly in immigrant communities. Thus, the present study pursues the goal of documenting language acquisition and grammatical knowledge of consecutive bilingual children, particularly, the bilingual knowledge of the indigenous children of Guatemala, who have acquired Kaqchikel[3] Maya (L!) at home, and Spanish (L2) at school.

The primary benefit that I foresee stemming from this study is that it would provide a starting point for further research on the consecutive bilingual child, and

[3] The Academy of Mayan Languages of Guatemala (ALMG) has replaced the old written form *Cakchikel* for the new form *Kaqchikel*.

establish a baseline of knowledge in bilingual consecutive acquisition comparable to that of European languages such as English. It is essential that we build a bank of knowledge about the linguistic input, word learning, morphological, syntactic, and semantic development of the two languages that indigenous children of the American continent have to acquire, which generally consist of an indigenous language and a European language such as English or Spanish.

I also foresee pedagogical benefits stemming from this inquiry for what we know about children's knowledge of their native languages at the point that they start Spanish schooling would help determine if lack of knowledge of some constructions is a developmental issue or an issue of L2 affecting the development of L1. The documentation of this type of bilingualism would assist efforts by indigenous communities to develop and maintain their indigenous languages.

1.1 Determining Bilingual Competence

The main concern of this study is the competence of bilingual children, i.e., their knowledge of the Kaqchikel and Spanish languages as reflected in performance. This study addresses two principal questions. How well do consecutive bilingual Mayan children know Kaqchikel and Spanish? What are their levels of bilingualism?

Mackey (2000) proposed that to determine a 'bilingual's mastery' it is necessary to test knowledge of the phonology, grammar, vocabulary, semantics, and stylistics of each language, in the areas of

comprehension, production, reading, and writing. Yet, the complexity of the research, the amount of data and the length of time required to collect it, makes it impossible to carry out this type of research in one study. Mackey (2000) had in mind the 'ideal' bilingual, who comprehends, produces, reads, and writes in both languages, but the reality is that bilinguals in many immigrant and indigenous communities do not read and write in their two languages. Generally, speakers in these communities are not provided the opportunity to develop their reading and writing skills in the language acquired at home, i.e., in an indigenous language or in another non-prestigious language.

In the case of the Mayan communities of Guatemala, it is generally the case that the school system has not and does not provide the Mayas with the opportunity to learn to read and write in their indigenous languages. Thus, the present study was conducted to test the knowledge of grammar and the lexicon in the area of production (and by implication comprehension) of consecutive bilingual children. Specifically, I tested the lexical knowledge of lexical items in the noun category, which refers to concrete objects. I also tested morphological and morphosyntactic knowledge of the transitive verb to determine their levels of acquisition in Kaqchikel and Spanish. The motivation behind the choice of the transitive verb is twofold: (1) it is the nucleus around which sentences are built; and (2) the structure of the transitive verb differs sharply between the languages, in that Kaqchikel is an absolutive-

ergative language and Spanish is a nominative-accusative language.

In this study, I assume that performance is a reflection of language competence. Chomsky in his book *Aspects* (1965:3-4) developed a linguistic theory in which competence is based on:

> [A]n ideal speaker-listener in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance... Only under the idealization set forth in the preceding paragraph is performance a direct reflection of competence.

This passage crucially contains significant insight into the difference between competence and performance, as well as into their close relationship. Furthermore, according to Chomsky (1975), knowledge of language is not the same as the capacity or ability to use it, although knowledge of language enters into the capacity or ability that is exercised in language use. He pointed out that a speaker might have fully developed the cognitive structure that is called 'knowledge of English', but 'no capacity to use this structure...' (Chomsky 1975:23). Hence, I assume in this study that the documented performance of the consecutive bilingual children is a reflection of their levels of competence in the two languages. I further assume that they may not have fully developed the cognitive structures that are called

'knowledge of Kaqchikel' and 'knowledge of Spanish', but that analysis of the levels of knowledge of these bilingual children will provide a characterization of the structures stored and assembled in their brains in the course of language use.

1.2 The Critical Period Hypothesis, Universal Grammar, and Bilingualism

Penfield and Roberts (1959:240) proposed that the brain of a child has a specialized capacity for learning language, which 'decreases with the passage of years'. The ability of immigrant children to acquire a second language without a foreign accent, and the brain plasticity of 3 to 4 year-old-children who transfer language speech mechanisms from left to right hemisphere, were cited in support of the child's specialized capacity to acquire a language. Lenneberg (1967:142), following after Penfield (1965), further proposed that the development of the human capacity for speech and language acquisition follows a 'built-in biological schedule', and these capacities appear only when 'the time is ripe and not until then'. Lenneberg proposed that 'a critical period extends from about age two to age 12'. Crucially, both Penfield (1965) and Lenneberg (1967) proposed that the specialization of the left hemisphere (brain lateralization) for language functions is evidence that supports a biological critical period hypothesis (CPH), and is the principal reason for the loss of the capacity to acquire a second language at native-like levels.

The loss of plasticity in the left hemisphere, according to these authors, occurs after puberty. Their

maturity. In other words, adult grammars are instantiations of 'steady states' because UG principles and language-particular grammatical features have been set.

Since the influential work of Penfield and Roberts (1959), Lenneberg (1967), and Chomsky (1980, 1981) research on adult second language acquisition has been centered toward answering the question of whether there is a critical period for adult second language acquisition. In other words, research has focused on whether UG is available to adult second language learners (for an overview see Ritchie and Bhatia 1996). White (1996) noted four hypotheses concerning the availability of UG in adult L2 acquisition: 'No access to UG', 'indirect access to UG', 'direct access to UG', and 'direct access to UG and L1'.

The 'no access to UG' hypothesis holds that UG principles are no longer available to adult L2 learners, and that adult L2 acquisition proceeds through the use of general problem solving procedures (e.g., Schachter 1988). The 'indirect access to UG' hypothesis proposes that UG principles are available to adult L2 learners, who use the L1 grammar as a basis, but have full access to UG when L1 becomes insufficient (e.g., White 1989). The 'direct access to UG' hypothesis maintains that adult L2 grammars are constrained by UG, just as with L1 grammars (e.g., Mazurkewich 1984). The 'direct access to UG and L1' hypothesis proposes that the L2 initial state is affected by both UG and L1 (e.g., White 1996).

Based on the critical period hypothesis, I assume that the difference between the acquisition of L2 in

children and adults is that children, unlike adults, still have available to them the 'specialized capacity for language' and the 'built-in biological schedule' to acquire language, i.e., they have access to UG. On the other hand, the similarity between these two groups is that both approach the task of acquiring a second language with a prior instantiation of an L1 with UG principles set, and, perhaps, with all language particular features acquired. In (1) I schematize the distinction between the states of L1 and L2, which is the distinction that I assume between the languages of the consecutive bilinguals of this study.

(1)

L1 acquisition: S_o, S_1, S_n,...,...,...,...,...,...,S_s

L2 acquisition: B_a, B_1, B_n,...,...,...,...,B_s

The child comes to the task of acquiring an L2 with a prior instantiation of L1, and has reached an S_n (or perhaps a steady state S_s) in L1. The initial state L2 is represented with B_a, and the final or steady state with B_s. I assume, as proposed by White (1996), that the child has access to both UG and L1 in the initial L2 states. Thus, for the consecutive bilingual children of this study, the initial state of L2 includes knowledge of an L1 (or an S_n) and access to UG. A steady state of L2 would ideally be native-like, meaning that it would not include any grammatical aspect of L1.

There is some evidence that children can acquire native-like grammars in L2, while adults not always do.

Johnson and Newport (1989) carried out a study with native Korean and Chinese speakers who had arrived in the United States between the ages of 3 and 39 years, and resided in the United States between 3 and 26 years. These native speakers were tested on a wide variety of English structures by using the grammaticality judgment task. They found that those who had arrived before the age of seven performed significantly better than those who had arrived later; thus, Johnson and Newport concluded that younger children are more successful second language learners than older children and adults.

Long (1990) examined research on the maturational constraints in language development, and concluded that language specific maturation constraints are operative in second language acquisition. Moreover, he claimed that there are critically sensitive periods during which language learning is successful, after which it is irregular and incomplete. According to Long (1990), the findings of long-term studies on child and adult second language acquisition indicate the impossibility of achieving native-like competence in phonology after the age of six, and the difficulty in acquiring morphology, syntax and semantics after the early teens.

Regarding other aspects of grammar, younger children may be outperformed by adults or older children. Fathman (1975) compared the phonology, morphology and syntax among immigrants between the ages of 6 and 15 years and found significantly better pronunciation among the younger children, while the older ones performed better on morphology and grammar. Mägiste (1992) also found that younger children do not outperform older ones on all

aspects of learning a second language. There is evidence, which suggests that children may be outperformed in the areas of morphology and grammar. Since these results are not conclusive, Romaine (1998:240) suggested that the essential or 'critical' factor for L2 acquisition is 'not age so much as the circumstances in which it takes place'.

1.3 Theoretical Assumptions about the Lexicon and Morphology

The theoretical background of this inquiry assumes proposals regarding the lexicon and grammar by Chomsky (1995) Jackendoff (1992), and Weinreich (1953) that I view as complementary. First, I adopt the view of Chomsky (1995), which essentially conceptualizes the lexicon as a list of 'exceptions' that do not follow from principles of Universal Grammar or of a specific language. Language specific principles include phonological, morphological, and language variation aspects, as well as choice of parametric options. According to Chomsky (1995:235), the optimal coding of a lexical entry includes only information sufficient to yield its LF and PF representations. For instance, the optimal representation of *book* in the lexicon specifies only the phonological and semantic information that is not predictable, including the sound-meaning relation. The lexical entry of *book* would also list its categorial feature [N], but case and phi-features would not be listed because they follow from being of category [N]. In sum, Chomsky's (1995:131) view of language acquisition is that it is essentially a matter of determining

'lexical idiosyncrasies with UG or other systems of the mind/brain constraining the properties of the lexicon to be acquired'.

Second, I adopt Jackendoff's (1992) proposal that a lexical entry for a physical object or an action includes information from a preference rule system and a 3D model representation that specifies the spatial structure of the object or action, in addition to its conceptual, syntactic, and phonological structures. Jackendoff (1992) proposes that the 3D model is translated into a form suitable for linguistic expression as it interfaces with conceptual structure via a set of correspondence rules, and that the lexicon is part of this correspondence rule component.

According to Jackendoff (1992:47), objects have a standard function and this information is part of what he called 'a preference rule system'; for instance, the English lexical item *chair* has a standard function 'roughly portable thing for one person to sit on' and has also a specified 3D model with; however,

> [O]bjects that have the proper function but the wrong form-say beanbag chairs-are more marginal instances of the category; and so are objects that have the right form but cannot fulfill the function-say chairs made of newspaper or giant chairs.

To Jackendoff the lexical item *chair* may not refer to an object such as 'a pile of crumbled newspaper', because it violates both the conditions of form and function, i.e., the specifications from the 3D model and the preference rule system; his preference rule system combines

information about form and function with lexical entries for functional nouns.

Third, I adopt Weinreich's proposal, based on the Saussurean signifier-signified distinction, which said that some bilinguals interpret parts of their linguistic systems as 'merged' rather than 'coexistent', and this occurs when 'an interlingual identification has occurred between semantemes of two languages in contact' (1953:8). According to Weinreich, a bilingual with a coexistent or coordinative type of lexical organization treats two semantemes (signifieds) as two separate signs. Whereas the bilingual with a merged or compound type of organization treats two semantemes as two separate signs, but with one single signifier for both languages. Figure 1.1 was adapted from Weinreich 1953.

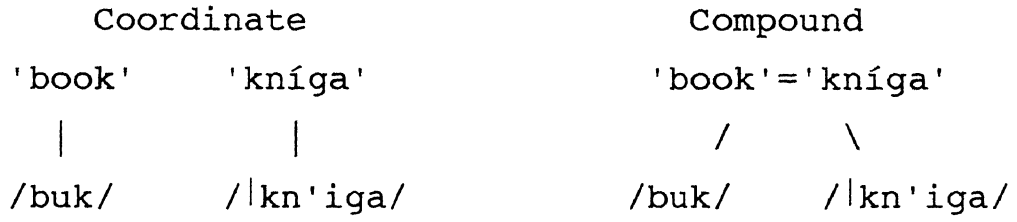

Figure 1.1 Two types of lexical organization

To Weinreich, the coordinative type treats English *book* and Russian *kníga* as two separate signs, and the compound type regards them as merged. A third type of lexical organization, the subordinative, can occur when a new language is learned indirectly through L1.

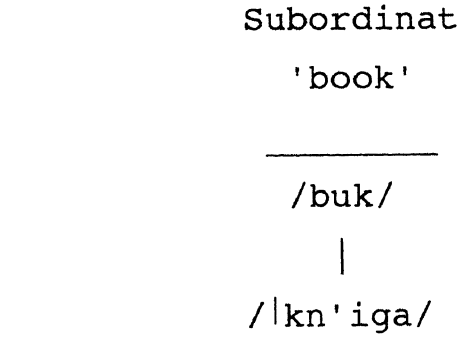

Figure 1.2 A third type of lexical organization

In figure 1.2, which is also adapted from Weinreich 1953, illustrates the organization of the lexical items *book* and *kníga.* Weinreich proposed that an English speaker learning Russian would identify the signified of *kníga* 'book' not as the object, but as the English semanteme *book.* He further proposed that the referents of the signs in the language being learned may not be actual 'things', but 'equivalent' signs of the language already known.

Weinreich assumed that the compound and subordinative organizational systems have a single underlying conceptual system that is shared by both of the bilingual's lexicons. The critical difference between the compound and subordinative systems is that in the former system semantemes from the L2 vocabulary access their conceptual representations directly, whereas for the latter, access to the L2 vocabulary comes about via the corresponding L1 semanteme. In contrast, Weinreich assumed that the coordinative organizational system consists of two conceptual systems associated with each of the two lexicons.

Weinreich made two important points that are often overlooked: the first was that it might be possible to make a transition from the subordinative to the

coordinative modes of organization, and the second, that an individual's or bilingual group's signs may be compounded while others may not (1953:10). In other words, not all semantemes are homogeneously organized in one type of organization; therefore, the lexicon can be organized along these three types of lexical organization.

The distinction between these systems has been the subject of intense study and debate, which continues according to Kroll (1993) because of conflicting results from a variety of experimental tests. The compound and coordinate lexical organizational systems have been referred to as the 'common or shared storage', versus the 'separate storage' hypotheses (e.g., Kolers 1963, Kolers and Gonzales 1980). Although studies assuming a mixed structure appear to be in the minority, De Groot (1993) has convincingly argued that a bilingual's lexicon may be located anywhere on a purely compound to a purely coordinate continuum, and specified that the learning history of L2 and its level of proficiency partially determine a bilingual's position on this continuum.

De Groot's (1993) position supported what Weinreich suggested in 1953; furthermore, studies have suggested that the type of organization may also depend on the word category. Concrete words and cognates are relatively often stored in a compound fashion while abstract words and noncognates are more likely to be stored in a coordinate form. Also, L2 words that are still in an early stage of being acquired may be represented in a subordinative form (De Groot 1993). Therefore, I shall assume Weinreich's (1953) and De Groot's (1993) proposals

that an individual bilingual's lexicon may be organizationally mixed, and that especially nouns that refer to concrete objects are stored in a compound or subordinative fashion.

With respect to morphology, it is undebatable that it constitutes a legitimate area of study in linguistics; nevertheless, whether it constitutes a separate 'component' of a grammar continues to be debated. Generative grammar has apparently assimilated the subject matter of morphology into syntax. For instance, to Lasnik (1995) even if inflection involves word formation, its computational operations still have a syntactic scope. Most recently, Halle and Marantz (1993) proposed an additional level of representation in the generative grammar model, i.e., they proposed a morphological structure (MS) between S-Structure and Phonetic Form and emphasized that MS is 'the interface between syntax and phonology'; however, their proposal is in contention. Moreover, it could be said that there is no consensus yet in regard to whether morphology consists of arrangement of items, processes, or whether is word based or morpheme-based.

Although this study does not intend to provide evidence in support of or against a specific theory, it is important to note that in the subfield of morphology there is the uncontroversial assumption that morphology can be divided in subcomponents that are known as inflection (the object of study in this work, especially verb inflection), derivation, and compounding. There is a general consensus on some of the properties of inflection, which include productivity, no word class

change (or syncategoramaticity, e.g., a verb marked [+Past] is still a verb), and semantic neutrality, because it does not change the meaning of the bases to which an affix is attached.

Finally, another long-standing controversial grammatical issue among generative grammarians is the association of object-clitics to the verb. To this day, there are two competing approaches to the derivation of clitics. One is the base generation approach which claims that object-clitics originate in a position associated with the verb. The second is the movement approach, which claims that the clitic originates in the canonical object position, and undergoes movement to the surface position that is associated with the verb. In my view, approaches to inflectional morphology, as well as Spanish clitics, are research programs in progress that will eventually shed light on issues of language acquisition.

1.4 The National Linguistic Context of Guatemala

Appel and Muysken (1987) have proposed a typology of bilingualism and described five dominant language contact situations. One contact situation has resulted from colonialism, and has created societies in which the high-prestige European languages 'coexist with the native languages of the conquered peoples' (1987:5). Based on Appel and Muysken's 1987 language contact typology, the type of language contact situation and bilingualism that exists in Guatemala can be said to have resulted from European colonial expansion. Hence, Guatemala is a

nation whose many indigenous communities contain both monolingual and multilingual speakers.

Officially, the Mayas in Guatemala plus small groups of Xinca and Garífuna speakers make up 42.8 percent of Guatemala's population (X Census of 1994). However, according to Mendoza (1999), scholars affirm that the Mayas represent 61 percent of the country's ten million people, which would make Guatemala one of the few nations in the continent with an indigenous majority. The rest of the population is integrated by *Ladinos*[4]. According to the 1996 figures of the *Proyecto de Educación Maya Bilingüe Intercultural* (PEMBI), there are 6,176,126 speakers of the twenty-three Mayan languages of the Guatemala; Kaqchikel is one of these. Kaqchikel is a member of the K'ichee'[5] branch of the eastern division of the Mayan family[6], and is spoken in the highlands of Guatemala. The *Proyecto de Educación Maya Bilingüe Intercultural* (PEMBI) has reported 1,032,128 Kaqchikel speakers.

1.4.1 Kaqchikel's Linguistic Context

Campbell and Kaufman (1990:55) proposed that the predecessor of the modern Mayan languages was spoken

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[4] *Ladinos* are the products of inter-marriages between Spanish and Indigenous people. In the colonial period, they shared socioeconomic and political power with the rulers of the Spanish crown. After independence from the Spanish Crown, *Ladinos* became the group with political, economic and social power (Garzon *et al.* 1998).

[5] K'ichee' was previously written as *Quiche*. The orthographic convention established by the Academy of Mayan Languages of Guatemala (ALMG) assigns the symbol ['] to indicate a glottal stop.

[6] Speakers of the Mayan language family inhabit Belize, the Mexican states of Chiapas, Tabasco, the Yucatan Peninsula, and Guatemala.

about 4,200 years ago in the region of the Cuchumatán Mountains of Guatemala. Since then, Mayan language speakers have come into direct and indirect contact with other language groups, including the Mixe-Zoquean language groups, which contributed loanwords to the Mayas, as well as influencing their writing system (Campbell and Kaufman 1990:55). Spanish colonizers had long lasting-effects on the Maya speakers, as well as *Ladinos*, who made Spanish the official language, and propagated its learning and use as prestigious.

The various Mayan groups have had different levels of language contact, mostly with Spanish, but also with other languages, including American English, and English Creole from Belize. Contact with the Spanish language has resulted in varying levels of bilingualism and multilingualism, which threaten the survival of the Mayan languages. According to Garzon (1998:10), language contact in the indigenous communities of Guatemala reflect:

> a continuum in their relations with the other language groups. At one end communities have virtually no bilingual speakers, while at the other widespread multilingualism is the norm.

However, language contact, economic and social pressures have also resulted, for some communities, in language shift toward Spanish, i.e., speakers in some indigenous communities are becoming Spanish monolingual.

1.4.2 Studies on Kaqchikel and Language Contact

Several studies clearly show that language shift varies across communities. Richards (1998) described a study of

San Marcos La Laguna, situated on the banks of Lake Atitlán, in which the people have developed 'incipient bilingualism', and the townspeople have begun to add Spanish to their Kaqchikel language, known as *tzojob'äl*. Richards (1998:89) analyzed the speech of young single men and community leaders who engage in Spanish borrowings, code switching and code mixing. The young single men use Spanish borrowings particularly in the mildly obscene joking context to:

> to define and maintain the group, but their use also signals to the other community members the supposed preparedness and willingness of this cohort to deal with the larger society beyond San Marcos.

The older community leaders who have a high social status and whose discourse style includes Spanish borrowings and mixing are regarded as being the better speakers of *tzojob'äl*. This style, according to Richards, usually occurred in more formal contexts and consisted of carefully integrating and manipulating Spanish words in their native language 'to enhance the perception of their oratorical prowess' (1998:89).

Richards (1998) also examined the increasing use of Spanish in the community and the school system. In the early 1980's, the San Marcos La Laguna community was monolingual, but over the last twenty years, has gradually moved to incipient bilingualism because Spanish has become a prerequisite for survival. Men and women utilize their knowledge of Spanish for economic and political ends. Borrowing occurs with new cultural concepts and items, and is also used to replace native terminology that has lost its 'communicative power'

(Richards 1998:90). In this community, the school system has produced various levels of bilingualism. During the 1970s, no students had graduated from the sixth grade, but by 1994, the nine students who enrolled in sixth grade graduated. To Richards (1998), it is unclear if the community's incipient bilingualism will become additive or move rapidly toward language shift, as it has occurred in other Kaqchikel highland communities.

Brown (1998) worked with four communities in the Quinizilapa Valley: San Antonio Aguascalientes, two villages, and an adjacent town, which were at the intermediate to late stages of shift. His work focused on the central role of parents of the 'shift generation', i.e., Kaqchikel speaking parents who shifted to Spanish in their communication with their offspring. Brown used survey data to identify correlations between language use and social factors such as educational level and economic activity. He found that in 444 homes, people over forty years old, the oldest group surveyed, were most fluent in Kaqchikel and had learned it during childhood. Moreover, those individuals who reported to have learned Kaqchikel at home also reported using it with their parents.

These survey data indicated to Brown (1998) that communities in the Quinizilapa Valley were becoming progressively less fluent in Kaqchikel. In all the towns of the valley, half the respondents did not speak Kaqchikel with their children, and Spanish was spoken to some degree in over two-thirds of the valley households. He concluded that if present patterns of language use continue, 'within two generations Kaqchikel will no longer be spoken in the valley' (1998:127).

Garzon (1998) investigated language shift in San Juan Comalapa and found that some parents spoke Spanish with their children, and these children were learning both Spanish and Kaqchikel at home. She also conducted interview-style proficiency tests in Kaqchikel and Spanish in Comalapa's primary school. Her findings indicated that while many children still learned Kaqchikel, Spanish served as the common medium of communication among school-age children. One-fourth of the children who were tested failed to respond adequately in Kaqchikel, and nearly all the children were able to converse in Spanish. She also found that women in their twenties had learned Kaqchikel from their schoolmates and from public places like the market. She pointed out that the hegemony of Kaqchikel in San Juan Comalapa had been successfully challenged and the majority of young adults were bilingual in Kaqchikel and Spanish.

1.4.3 The Role of the School System

The role of the government in maintaining the languages of the Mayan speaking communities has historically been detrimental. The Mayan languages are considered a cultural inheritance to the nation yet; the Guatemalan Constitution does not endorse their use among the Mayan population. In other words, Article 143 of the Constitution states that Guatemalans including the Mayas must communicate in Spanish. Although the public school system has had a generally assimilationist approach, in recent years, since the Peace Treaty of 1996, the government has made concessions to the establishment of bilingual education programs. Although success at

teaching Spanish varies from community to community (Richards 1998), the school system is a powerful social force pushing language shift forward.

Historically, Mayan children have arrived at school as monolinguals, but this is also changing, and in some communities Mayan children are arriving to school knowing Spanish. The first stage of language shift for Kaqchikel Maya children could be consecutive bilingualism. This pattern of consecutive bilingualism resembles that of the linguistic minorities in the United States, and this is a common pattern of linguistic minority communities around the world, as well. The acquisition of an L2 and the development of bilingualism can rapidly shift to Spanish monolingualism, since the school system has historically been used as tool of acculturation and *castellanización*, i.e., children learning to read and write in Spanish at the expense of their native languages. Recently, however, the Ministry of Education has promoted bilingual education in Mayan areas, and Kaqchikel instruction has been integrated into the curriculum of some Tecpán primary schools. According to the office of public education in Tecpán in 1999, fifteen of the thirty-three schools had a bilingual program.

The first obstacle that Mayan children and adolescents face is socioeconomic. The Guatemalan government has gradually reduced the budget of the *Ministerio de Educación* (Education Ministry). In 1985, the government reduced the budget to 14.47% from the gross national product, and by 1993, to 12.77%. In turn, the *Ministerio de Educación* has allocated its shrinking resources to elementary education, primarily in non-Mayan

urban schools, placing the education of Mayan children at a disadvantage. In a 1994 report, the ministry estimated that, nationally, 28 out of 100 children were not being provided an elementary education. However, in some Mayan regions this ratio is much higher; for instance in Alta Verapaz, 63 out of 100 children were not being provided an elementary education.

Badly equipped schools, lack of basic teaching materials, crowded classrooms, and insufficient schools for rural teacher training make the situation graver. Generally, children in Guatemala start 1st grade when they are 7 or 8 years old, and the school year starts in January and ends in September. Although there are schools with bilingual curricula, most schools are Spanish monolingual. According to Tay (1996), there were 102 schools for training urban teachers and only 6 for training rural teachers. Furthermore, Mayan children are forced to repeat grades more often than non-Mayan children, and they also drop out of school in greater numbers. These inequalities affect the academic success of Mayan children.

Table 1.1 Percentages of students who failed a grade or dropped out

Schools	Children who failed a school grade	Children who dropped out
Urban Elementary	18.9%	23.8%
Rural Elementary	31.7%	42.5%

The table above shows some of the data discussed by Tay (1996), which demonstrate that children from both urban and rural schools have serious problems in elementary

school. However, Mayan children, who mostly live in rural areas, are the more affected of the two groups. Thus, besides having to overcome institutional inequalities, the children have to overcome a language barrier, as well. They are expected to learn to speak, read, and write the Spanish language in one year. Those Mayan children who fail a grade generally fail the first grade of elementary school. According to Tay (1996) the most important reason that teachers give is the children's failure to learn to read or write. The problem is that the majority of Mayan children start school knowing only a small repertoire of Spanish words; they are suddenly immersed in a language that they do not speak.

According to Garzon (1991), observers of Mayan communities have pointed out that speakers are loosing their Mayan languages while they frequently fail to learn 'good' Spanish in its place. This investigator administered a test to 270 Kaqchikel Maya students, and found that some of the students' responses were in standard Spanish; others were typical of a non-standard variety of rural Guatemalan Spanish; while others were simply defective.

1.4.4 Language Maintenance and Shift in Tecpán

Tecpán is located in the highlands of Guatemala, 88 kilometers from the capital, Guatemala City, to which the Pan American Highway connects it. Its altitude is 2,200 meters, and it has a mild to cold climate, with yearly temperatures varying between 10 to 23 C°. Tecpán is in the department of Chimaltenango, and is just four

kilometers north of the pyramids of Iximché, which were founded in 1470 by the Kaqchikel Mayas, who used it as their ceremonial center until the arrival of the Spaniards in 1524.

The proximity of Tecpán to Iximché and the Pan American Highway, along with the agricultural, manufacturing, and textile economies, have resulted in its greater integration into the national society; for instance, besides the traditional corn crops, lettuce, cabbage, beets, and broccoli, as well as flowers are cultivated for export. Family shops that manufacture sweaters are rapidly multiplying, and these hire eight to ten employees each. According to a 1999 interview with a Mr. José Alfredo Cojti Chiroy, member of the municipality's staff, in 1994 there were 41,152 inhabitants in the town, and by 1997 there were 49,332 inhabitants. Similarly, Mendoza (1999) noted that it was estimated that over 50,000 people inhabit the municipality.

Although Mendoza (1999) found that 80 percent of the Kaqchikel Mayas speak their native languages, José Alfredo Cojti Chiroy from the Tecpán municipality told me during a 1999 interview that Kaqchikel Maya parents motivated by economic pressures were deciding to speak Spanish rather than Kaqchikel with their children. José Alfredo Cojti Chiroy, a native Kaqchikel speaker, said that he had decided to use both languages at home with his family. The decision of indigenous parents to speak the dominant language at home is not an unusual phenomenon; it is a worldwide phenomenon and the Mayans in Guatemala are no exception. However, this decision

may be detrimental; Garzon (1998) has pointed out that the decision by Mayan parents to speak Spanish, the dominant language, with their children is a crucial step in the loss of the Mayan languages.

To date, there are practically no studies on Kaqchikel-Spanish acquisition, as well as language shift in the community of Tecpán. In 1999, I conducted a language survey in the Kaqchikel Maya municipality of Tecpán, Guatemala. I administered language surveys to 170 junior high school students at the *Instituto Nacional Experimental* (I.N.E.B.O). I found that 25 percent of the Spanish monolinguals have Kaqchikel-speaking parents, and 54 percent had Kaqchikel-speaking grandparents. In other words, 79 percent of the Spanish monolingual students had shifted from Kaqchikel to Spanish. Even though their parents and grandparents spoke Kaqchikel, the students communicated with them mostly in Spanish; 93 percent reported that they spoke Spanish to their parents, and 80 percent spoke Spanish to their grandparents. This shift occurred within only three generations.

1.5 Research Methodology

Researchers have been investigating the bilingualism of an individual or a group with various methodologies and tests. Macnamara (1967, 1969) classified the types of tests used to measure levels of bilingualism into four categories: rating scales, fluency tests, flexibility tests, and dominance tests. Rating scales include interviews, language usage scales, and self-rating. In the case of self-rating, individuals are asked to assess their ability in a language in relation to various

skills. A balance score is computed by subtracting the values obtained for one language from those of the other. If the difference is close to zero, or zero, the bilingual is considered to be equally fluent in both languages, and a balanced bilingual.

A variety of fluency tests have been used to assess dominance, e.g., picture naming, picture description, word completion, oral reading, and following instructions. However, the testing of fluency has been heavily emphasized in measuring proficiency. Grosjean (1982:231) criticized fluency tests and argued that far too much weight has been put on fluency at the expense of:

> [O]ther factors such as the regular use of two languages, their domains of use, and the bilingual's need to have certain skills (reading and writing, for instance) in one language but not in the other.

He argued that a linguistic description of the bilingual that takes into account such factors is more valid, accurate, and complex than a mere index of fluency.

In the field of language acquisition, there is some parallel in the methodologies used; however, the questions researchers are investigating are not about fluency or balanced bilingualism, but more often about when and how does a child acquire productive grammatical competence with certain grammatical forms. This two-fold question is approached with testing methods such as spontaneous production data, elicited imitation, elicited production, picture selection, the act-out task, questions after stories, judgments of grammaticality and reference, etc. All of these methods can provide

positive evidence of a specific grammatical construction, but they are also limited since, excepting perhaps for spontaneous speech, they can be affected by the extraneous demands of the experimental task.

Since in this study I address the question of levels of knowledge in bilingual children at time *X*, i.e., between 8;00 and 10;00, I adopted the tasks of picture naming, picture description, and acting-out. I consider these tasks as being different examples of the elicited production method. Elicited production is a technique designed to reveal the grammars of children by having them produce particular structures. According to Thornton (1996:78), the elicited production technique has two general advantages. First, it reveals the child's grammar without the necessity to make 'inferences from "yes" and "no" responses, as is necessary in a judgment task'. Second, the experimenter can control the meaning that is to be associated with the targeted utterance. Furthermore, Thornton (1996:78) pointed out that such resulting data reveals what children '*do* say', and if the correct controls are included along with this technique, 'they also reveal what children *cannot* say'.

Picture naming is a decoding task that has been amply employed and researched (Snodgrass 1993). According to Hochberg and Brooks (1962) children as young as two can perform this task fairly reliably, even without access to pictorial representations. This decoding task requires that the children make a visual recognition, and then access their semantic knowledge. For the picture naming task, as well as with the others, I excluded the question of reaction time, since it has

been criticized by Jakobits (1969) on the grounds of memory limitations and the impossibility of obtaining equal reaction times cross-linguistically. Moreover, I view reaction time as indicative of the frequency with which a given lexical item is used, and not of knowledge of the item. Thus, the picture naming task was selected to elicit the children's bilingual knowledge of lexical items that refer to concrete objects.

Concerning the act-out task, Goodluck (1996:148-150) pointed out that this task has the following advantages: it is not intrusive, it allows subjects to volunteer their own interpretations, it is easy to administer, it is fun, and it avoids bias to a particular response. The principal motive for choosing this task for the methodology of this study is that it gives an exact indication of who does what to whom. This task was chosen to document and test the children's knowledge of the transitive verb in Kaqchikel and Spanish. The act-out tasks of this study were elaborate. They did not require the child to act-out a story or a sentence, but rather they required that the children follow instructions, or observe the interviewers perform specific actions, interpret those actions, and then describe those actions by answering the interviewers' questions about them. Thus, the act-out tasks along with the picture description tasks were selected to elicit the children's knowledge of the Kaqchikel and Spanish transitive verb.

1.5.1 The Collection and Elicitation of the Data

The collection and recording of the data were conducted during three visits to Tecpán, Guatemala, over a time span of eleven months. These visits lasted for periods of four to six weeks, during October 2000, January 2001, and August 2001. All sessions were conducted in Kaqchikel and Spanish. I conducted the Spanish recording sessions and María Florencia Rodríguez conducted the Kaqchikel ones. All the recordings were conducted in the same order: recordings were made first in Kaqchikel and later in Spanish. The younger children were recorded first, followed by the older children. On one occasion, we had to alter this order: a mother asked that her older son be taped first, since he had to run an errand. The sessions could not be controlled for environment noise; thus, some data samples had to be discarded because the occasional sounds of a baby, truck, rooster, or dog made them unintelligible.

During these visits, the methodology to elicit the production of verb forms was gradually made more complex. The methodology applied during the first visit consisted of engaging the participants in the tasks of naming and describing drawings and pictures. The picture naming and description tasks required a three-stage process. First, comprehension of the question *what do you see?* This question was carefully and specially chosen to avoid interpretation bias toward either the agent or patient of an action in a drawing. Second, it required an interpretation of a drawing, and third, oral production of the interpretation in Kaqchikel and Spanish. The picture naming task elicited lexical equivalents of the

[+N] category, and the description task was designed to elicit third person singular and plural verb inflection.

The picture naming task consisted of 100 pictures presented randomly to the children, and these represented the following five semantic domains: Artifacts (20 items), Produce (17 items), Living Things (20 items), Nature 14 (items), Garments (10 items), Body Parts (12 items), and People terms (7 items). The pictures were chosen carefully to represent objects from both the Kaqchikel Maya and Ladino cultures, including objects that I had seen in the homes and market that I visited in Tecpán, as well as the town and surrounding environment. Also, some of the pictures, or drawings were adopted from one of the textbooks published by the Mayan Language Academy in 1994. The results of this task are listed in appendices A-E, and some of the pictures and drawings used for naming are included in appendix H.

The picture descriptions and the act-out tasks were both implemented to elicit the production of the full inflection of the verb, or the application of inflectional word formation rules in the case of Kaqchikel, and in the case of Spanish, the clitic affixation and case assignment, both of which were elicited for the six grammatical persons that both languages encode. In what follows, I lay out the tasks that were performed to elicit the production of these six grammatical persons.

The elicitation of the first person singular and plural forms took place during the second visit. The children were requested to act-out or perform certain activities, and after doing so, each child was asked to

describe what she or he had done. The children were also shown a series of drawings depicting two children performing daily activities; they were requested to describe the activities, and afterward, they were asked to talk about what they themselves did everyday. It was expected that the children would re-use some of the verbs that they used to describe the drawings; however, the main objective was to elicit the first person inflectional forms. In addition, I designed a task that required the child to complete a paper doll's face by placing stickers depicting the missing facial parts. After the child completed the task, he was asked to say what he or she had done. Elicitation of the first person plural required that one of the interviewers perform actions with the child, and that the child describe what the two of them had done.

The inflection of the second person singular and plural forms was elicited during the second and third visits. The children had to interpret and describe acts in which they participated as patients, while the interviewers were either agents or patients. These required that the interviewer(s) act-out: (1) putting on and taking off a sweater; (2) taking off and putting on the sweater of the participant; (3) touching the child's head, or that of the second interviewer, and those of both the child and the second interviewer; and (4) hugging the participant, the second interviewer, and both the participant and the second interviewer. After an act-out task, the child was asked about the agent(s) actions. These tasks required that the children observe the interviewers perform specific actions, interpret

those actions, and then describe them using the second person singular or plural forms.

The data for the third person singular and plural inflections are based on the children's descriptions of drawings presented to them during all the visits, most of which represented humans performing actions on or to other humans or animals. These actions were: braiding, combing, feeding, hugging, kicking, petting, pushing, throwing, and washing.

Drawings representing people performing actions, unlike pictures of specific objects, leave open many possibilities for description; nonetheless, it was expected that the children would focus on the agent's actions (see drawings in appendix I). Some drawings were interpreted in unexpected ways; for instance, a drawing of a mother washing her son's face was interpreted as the boy dying or already dead. The problem was that the boy was leaning back and his eyes were half-closed. Thus, for the second visit, some drawings were re-drawn. The data on the transitive verb for both languages is included in appendices F-G.

1.5.2 The Community, Accountability, and the Participants

To find participants for this study was difficult since many Mayas distrust *Ladinos* and foreigners. The distrust of *Ladinos* is rooted in a history of oppression as well as on current social inequalities. Researchers have been able to observe this situation directly; for instance, Pye (1980:45) pointed out that the *Ladino* 'is object of Zunileco's worst fears and suspicions', and added that this is due to the subordinate socio-political status of

the Zunileco Maya people. Additionally, there are persistent rumors across Guatemala about children being stolen to be sold for adoption to foreigners. Garzon (1991:123-124) reported that U.S. citizens, known as *gringos* were not trusted:

> There were rumors about gringos stealing Indian children...One of my American friends working in a nearby town was warned by a friend that he should avoid looking at children when he was walking in town.

This investigator was forced to abandon the survey that she had set to collect since many residents of Comalapa were fearful of people asking them information. In 2001, on *Univisión* news reported the lynching of a Guatemalan bus driver and a Japanese tourist, and injuring other Japanese tourists. This incident was precipitated by the Japanese tourist's attempt to take pictures of a mother breast-feeding her baby. The Guatemalan bus driver died when trying to protect the tourists.

I was automatically identified as a *ladina* (female non-Maya Spanish speaker) and I was accordingly mistrusted. Some of the parents were initially reluctant to allow their children to work with me and initially agreed mostly because they knew María Florencia Rodríguez, a native speaker of Kaqchikel, very active and well respected in the Tecpán community, who worked with me as the project's assistant. Her work and cooperation in this study have been essential.

In the search of participants, I faced, as a researcher, the very important issue of accountability. In the course of trying to secure permission from parents

to allow their children to participate in the study, one parent, Macabeo Guorón, raised several issues. Some of these had to do with the language in which the study would be written, the data that would be included in it, the people who would read it and benefit from it, and the people who would get copies of it. Macabeo Guorón looked at me sternly and said that researchers from the United States arrive in Guatemala and secure participation from the community, gather data, leave, and seldom provide the community with the results of their studies, and when they do, they provide them in an unreadable written form, i.e., English. Macabeo Guorón told me that he hoped that I would not do the same. Thus, it became evident that members of the community, such as Macabeo Guorón, had strong opinions about U.S. researchers, and believed that the data that I was about to gather was not mine, but it belonged to the community. Hence, I made a commitment to include all the data that I collected in this work with the expectation that other researchers could and would use it. I also made a commitment to write a summary of the study in Spanish. Hence, all the data that I collected comprise six appendices, which are organized according to group, language, and linguistic areas of the lexicon and morphosyntax.

With respect to the participants, three mothers who agreed to participate in the study had informed us that their children spoke Kaqchikel and Spanish. However, during the first recording sessions, we discovered that these children did not speak Spanish, but rather, had acquired Spanish vocabulary. Two of these children were able to construct a few sentences with faulty Spanish

morphology, but could not speak Spanish fluently. Clearly, the mothers' perceptions of their younger children's Spanish competence did not reflect reality.

Finding ourselves with only Kaqchikel monolingual speakers, we asked one of the mothers to allow us to work with her 9-year-old son. Also, three of María's own children participated in the study, as well as two of her nephews and one of her nieces. Thus, fourteen children, from six families participated and some of these children were siblings, cousins, or half-brothers and half-sisters. Moreover, the age range of the bilingual group was not the anticipated one; the ages of the bilingual children who participated in this study ranged from eight to ten years old.

We continued to test the monolingual children and I compare their data to that of the bilingual children. Hence, the children whose data I describe and analyze in this study include six Kaqchikel monolinguals whose ages ranged from 2;5 to 7;0, and eight consecutive bilingual children whose ages ranged from 8;00 to 10;10. Finally, I suggest that these children represent the community's various patterns of monolingualism and bilingualism that result from language contact.

1.5.3 Patterns of Language Use in the Families

Zentella (1997, 2000) documented four principal home language patterns for twenty Puerto Rican families in New York. The first pattern is parents who spoke only Spanish to each other and the children, who responded to their parents in Spanish, but spoke English and Spanish with each other. In the second, the parents spoke

Spanish with each other and the children, but one of the parents sometimes spoke English to them as a second language. Although the children responded in both languages, they preferred Spanish for their parents and English for each other. The third pattern is parents who spoke English to everyone, but one parent spoke some Spanish to the children, and the children spoke to the parents and to each other in English. The fourth pattern is parents code-switching frequently among themselves and to the children, who were too young to speak yet.

Unfortunately, Zentella (1997, 2000) did not consider the role of the media, which can be a powerfull influence on the patterns of language use in the family, as well as on the family's preference toward Spanish. Nevertheless, one interesting generalization that can be deduced from the four patterns documented by Zentella is that the Puerto Rican children preferred English, the dominant language. Thus, patterns of language use in the family are important indicators of bilingualism and language shift, as well as the language preferences of the children.

It is important to note that the Mayan language revitalization movement that started in the 1990's had been influential in establishing patterns of language use in the family that favor the maintenance and development of the Mayan languages. Participants of this movement have determined that language revitalization is essential to reverse present language shift trends, and have promoted the use of Mayan languages by parents with their children. For instance, in communities such as Tecpán,

Summer schools were established to teach Kaqchikel and Mayan culture to Mayans who were Spanish monolingual.

Only one family in this study presents the third patter of language documented by Zentella (1997, 2000). In the Guorón family, the parents used Spanish with their oldest children; however, the revitalization movement motivated them to switch from speaking Spanish to speaking Kaqchikel with their youngest children, Ixmukane (10;20), Tojil (9:5), and Yaxum (8;3), who participated in this study. The parents reported that the older children went to summer school to learn Kaqchikel, and that the entire family switched from Spanish to Kaqchikel at home. The three youngest children grew up with Kaqchikel speaking parents and siblings, while their oldest ones grew up with their parents speaking Spanish at home. However, I was able to observe that Ixmukane, Tojil, and Yaxum preferred to use Spanish while they played; they also watched Spanish television and listened to Spanish radio with their older siblings. At the beginning of this study, the ages and grades of the children were: Ixmukane was 10;10 and in sixth grade, Tojil was 9;5 and in first grade; and Yaxum was 8;3 and in second grade.

The Guorón children entered school speaking only Kaqchikel, and only the boys had difficulty during the first years. Tojil suffered the most at the beginning; this mother informed me that he was ridiculed by his schoolmates at first because he did not speak Spanish, and later because of his non-native Spanish pronunciation. Tojil had to repeat first grade twice because he had not learned to read and write in Spanish.

In contrast, Yaxum, the youngest, repeated first grade only once.

The language pattern use of the family of Kot, and Ixb'alam is similar to the previous one in that the parents, Pakal Rodríguez Guaján and Rosa Zapeta, support the Mayan language revitalization movement, and consciously decided to speak to their children in Kaqchikel. Although the mother is a native K'ichee' speaker, she speaks to their children only in Kaqchikel. Two of their children participated in this study: Kot (8;2) who was in 1st grade; and Ixb'alam (9;8) who was in fourth grade. They have lived in other towns besides Tecpán and are currently living in Guatemala City. Ixk'ik, their oldest sister, commented to me that Kot had no difficulty in the first years of school, because he had already learned some Spanish from his neighbors and playmates. This was not, however, the impression of the father who reported that the girls complained that Kot did not want to speak to them in Kaqchikel and spoke to them in Spanish instead. I also had the opportunity to observe them play in Spanish and watch Spanish TV, which they did with great enthusiasm.

Raxche' Rodríguez Guaján has actively participated in the Mayan language revitalization movement. Two of his children participated in this study: Ixyamanik (2;5), a Kaqchikel monolingual speaker, and Säqche'[7] (8;0), a bilingual speaker. Säqche' was in 1st grade when the study begun. I was informed that the children also had access to Spanish TV and radio, but that they did not use

[7] This symbol ['] indicates a glottal stop in the Kaqchikel writing system.

them much. Their parents were bilingual and very conscious of the importance of maintaining Kaqchikel. They spoke to the children only in Kaqchikel, and the children responded to them in Kaqchikel.

The Sancir family is Kaqchikel speaking, and the family's two older daughters participated in this study: monolingual Mercedes (6;03) and bilingual María Angélica (9;00). María Angélica was in first grade and there were no reports of her having difficulty with school. Their parents had come to Tecpán from an *aldea* (small village in the mountains); they spoke to the girls only in Kaqchikel, and the girls responded in Kaqchikel and speak it with each other. These girls did not have any contact with Spanish at home since they had no access to Spanish TV and radio. However, the mother reported that her sister, the girls' aunt, who lives in the capital city, speaks to them in Spanish when she visits, and is always teaching them Spanish words. Mercedes, who was six years old at the time of the first recording, had not yet started school, and her mother identified her as a bilingual speaker, although we found out the first day of recording that she was monolingual.

María Reymunda Vala and German Warkax López are the parents of Ervin, Henry, and Ronald; and they spoke to their children in Kaqchikel. This family had recently moved from an *aldea* to Tecpán. The father, who worked in the capital city, occasionally taught the children Spanish words and expressions. Ervin (9;00), Henry (7;00), and Ronald (4;00) speak to each other in Kaqchikel, but Ervin reported that had tried to teach his brothers some Spanish words. Ervin was in 1st grade and

learned Spanish at school. He told us that when he started school, he did not understand anything, but that eventually he did. Henry and Ronald were identified by their mother as Kaqchikel-Spanish bilinguals, although we later discovered that they did not speak Spanish fluently. These children, too, had access to Spanish television and radio. On one occasion while I was visiting, Ervin turned on the television, and *Xena the Warrior Princess* was on in Spanish. The children kept asking Ervin to translate for them, which he did for a while; thus, the oldest child was already playing the role of Spanish teacher and Kaqchikel translator at home.

Monolingual Lorena (3;7) and Marvin (6;3) were half-brothers and sisters of Ervin, Henry, and Ronald. Their parents, Dolores Morales Umül and German Warkax López, also spoke to them only in Kaqchikel, and the children responded in Kaqchikel, as well. The father taught them Spanish words and expressions. At the time of our visits, they had been in Tecpán just two years; they had moved from an *aldea*. The mother told us that Marvin spoke Kaqchikel and Spanish, although we discovered that he did not speak Spanish, but had acquired some Spanish vocabulary and a few phrases. Thus, Ronald, Henry, Marvin, and Mercedes had in common the fact that their mothers identified them as bilingual, most likely based on the fact that they had acquired some Spanish vocabulary.

1.5.4 The Recording Equipment and Environment

A portable Marantz Model PMD201 and Sony microphone were used in recording these data. Most recordings took place

in the homes of the children or of their relatives; which was desirable. According to Thornton (1996) children are more likely to talk freely and to use more grammatically complex linguistic constructions, when they are in a familiar environment. On one occasion, the electricity went out, and a session had to be recorded under candlelight. On another occasion, a recording session was scheduled by a parent to take place in a popular restaurant.

The mothers were present during the first sessions. After the first recordings, I was able to win the mothers' trust, and they would leave the room where the recording was taking place, to carry on with their home responsibilities. The younger children were afraid of me during the first visits, especially the youngest girl, Lorena. She eventually lost her fear and allowed me to seat her on my lap. The children began to trust me and feel more comfortable around the equipment and me. During the last visits, the children were happy to see us, and they could hardly wait for their turns.

1.5.5 Transcription and Recording of the Data

María Florencia Rodríguez and I collected and transcribed the Kaqchikel data of the first two visits. We also collected the Kaqchikel and Spanish data of the third visit, while authors Ixchel Espantzay and Pakal B'alam Rodríguez transcribed the Kaqchikel data. I transcribed all of the Spanish data. Kaqchikel data was transcribed using the Kaqchikel alphabet as proposed by the Academy of Mayan Languages of Guatemala (ALMG), and to which the Kaqchikel Linguistic Community added the lax vowel ë in

1993. The following chart of the Kaqchikel alphabet is adapted from García and Rodríguez (1997):

Table 1.2

KAQCHIKEL ALPHABET	
Stops	**p**, **t**, **k**, **q** (uvular), and '(glottal)
Glotalized Stops	**p'**, **t'**, **k'**, **q'** (uvular)
Affricates	**tz** (alveolar), and **ch** (alveopalatal)
Glotalized Affricates	**tz'** and **ch'**
Fricatives	**s** (alveolar), **x** (alveopalatal), and **j** (uvular)
Nasals	**m** (bilabial) and **n** (alveolar)
Lateral	**l** (alveolar)
Flap	**r** (alveolar)
Semivowels	**w** (labial) and **y** (palatal)
Tense Vowels	**a**, **e**, **i**, **o**, **u**
Lax Vowels	**ä**, **ë**, **ï**, **ö**, **ü**

As shown on table 1.2, the Kaqchikel alphabet consists of 32 alphabet letters or graphemes, which are divided into 22 consonants and 10 vowels. There are 16 consonants, 6 glotalized consonants, five tense vowels, and five lax vowels. All the Kaqchikel data were transcribed using this Kaqchikel alphabet, and the Spanish data were transcribed using the Roman alphabet.

We were able to record the Kaqchikel and Spanish sessions with most of the bilingual participants during

the first and second visits. During the third visit, we were able to record six of the children for both language sessions, except for María Angélica and Kot. Due to constraints of time, María Angélica was recorded in Kaqchikel, but not in Spanish. It was impossible to record Kot during the third visit, because he had recently moved to Guatemala City. Five of the six monolingual children were recorded during the third visit; the youngest one, Ixyamanik, was not able to participate either, due to constraints of time and distance.

1.5.6 Coding the Data and Criteria To Determine Knowledge of Verbal Inflection

Various criteria have been employed by investigators to determine when a morpheme has been acquired. The best-known criterion is that of Brown (1973), who considered a morpheme to have been acquired when its measure reached ninety percent, i.e. ninety percent of obligatory morphemes that were produced by the child. Radford (1990) distinguished between 'acquisition' and 'mastery', and proposed that English inflection becomes productive when it is 'always and only attached to an appropriate class of stems in an appropriate context' (1990:24). Pizzuto & Caselli (1994:156) used two criteria for counting a form as productively constructed in Romance languages: a verb root was considered productive when the same verb root appeared in at least two distinct inflected forms, and inflection was considered productive when the same inflection was used with at least two different verbs. Although these criteria were not

designed for consecutive bilinguals, I have used it as a guideline. Finally, I developed a coding system for the various fields of linguistic knowledge, i.e., lexical and morphosyntactic. These coding systems are discussed in detail in the corresponding appendices.

In sum, in this study, I present results of my inquiry into lexical and morphological acquisition. In particular, I examine Kaqchikel inflection of the transitive verb. The goal is to explore the acquisition of verbal inflection by the eight bilingual children, to test how well they know Kaqchikel verbal morphology, and how this knowledge is predicted by their levels of lexical knowledge that I tested for this study. Regarding the Spanish transitive verb, I tested the children's knowledge of the phrase-internal structural relations between the verb and its internal argument structure in L2. In particular, I examine how well the eight bilingual children had acquired personal 'a' marking and cliticization, as well as determine their different interlanguage levels, and assess how their morphosyntactic knowledge is predicted by their Spanish lexical knowledge. The rest of this study is organized as follows: chapter II deals with lexical acquisition and the bilingual lexicon; chapter III presents the data on the Kaqchikel transitive verb; chapter IV presents the data on the Spanish transitive verb and the morphosyntactic realization of the direct object in clitics; and chapter V presents a summary conclusion of the data from the previous chapters.

Chapter II

The Organization of the Bilingual Lexicon

In this chapter I present results of my inquiry into the organization of the lexicon in eight consecutive bilingual children. The objective of this inquiry is to determine levels of bilingualism. The results are intended to be indicators of the levels of lexical knowledge achieved by the children in both languages and the possible correlation that these may have to other areas of grammatical knowledge, such as morphosyntactic knowledge of the transitive verb. The data in this chapter not only concerns the bilingual children, but also six monolingual children, three monolingual mothers and a bilingual grandmother. The motivation behind including data from an adult group was to determine if the high percentage of Spanish loanwords produced by both the bilingual and monolingual children was the result of language acquisition or language contact. During my second visit, I interviewed the adults and proved that the borrowing patterns of the bilingual children were due to bilingualism and to language contact, and those of the monolingual children and adults were mostly due to language contact. Hence, data from the monolingual children and the adults were included in those sections of this chapter that deal with borrowing phenomena.

Lexical acquisition for consecutive bilinguals consists in their becoming aware that objects are labeled with two or more lexemes. In other words, in addition to the names of objects, events and actions in L1, a new set of different lemmas that are ruled by different morpho-phonological constraints need to be tagged to the same

exact objects, events and actions. According to Hoffmann (1991), cognitive factors, such as maturity and memory, sociocultural dimensions, such as the presence of L2 in the community's environment and the status of the two languages, can all influence lexical acquisition.

Hoffmann (1991) asserted that the semantic load involved in the lexical development is bigger for the bilingual than for the monolingual child; however, the overall resulting lexicon is rarely twice as big. Indeed, Cooper (1971) found that Spanish-English bilinguals had different scores on word naming tasks, depending on the domain, e.g., the family, neighborhood, school, etc. In some domains these bilinguals were 'balanced,' while in others they were not. Doyle, Champagne and Segalowitz (1978) compared twenty-two bilingual children with twenty-two monolingual ones, between 3;6 and 5;7. They found that the monolinguals had a larger vocabulary than the bilinguals in their dominant language.

The goal of this lexical study is to determine how balanced are the lexicons of the eight Kaqchikel-Spanish bilingual children. By way of predictions, the hypothesis of the present inquiry is that due to sociolinguistic factors the lexical organization, in the grammars of these eight bilingual children, would resemble that of the studies previously discussed, i.e., there would be lexical balance and overlap. As preliminaries of this chapter, the semantic fields and terminology chosen for this inquiry are introduced first, and, then, I discuss the data, as well as other major

findings, which include what I call stages of loanword assimilation and L1 subordination.

2.1 The Semantic Fields

The semantic field concept is drawn from Lehrer's (1974) semantic theory that conceptualizes the lexicon as a system of interrelated networks, in which there is a meaning inclusion relation between the items in the field and the field category itself; classical examples of semantic fields are color, kinship, cooking and body-parts. Semantic theory has recognized several types of paradigmatic relationships, which include the hyponym, hypernym, co-hyponym and meronym. Hyponymy is the semantic relationship between specific and general lexemes, such that the former is included in the latter; for instance, *rose* is a hyponym of *flower*. Hypernymy is the relationship between the general and the specific; *flower* is a hypernym of *rose*. The lexemes included within the hypernym or superordinate term are said to be co-hyponyms; for instance, with reference to *flower-rose*, *daisy*, *tulip*, etc. are co-hponyms. Meronymy refers to part/whole relationships; for instance, *finger* and *hand*, or *room* and *house*. Part/whole relationships are not integrated by pairs of words only; e.g., *hand*, *elbow*, *forearm*, *wrist* are in a part/whole relationship.

It has been proposed that lexical items from some semantic fields are subject to lexical borrowing and interference, but that others, known as *core vocabulary*, are not. Romaine (1995) proposed that body parts, numbers, personal pronouns and conjunctions belong to the *core vocabulary*. Moreover, items basic to society, such

as 'fire', 'hands', 'two' and 'daughter' are considered to be *core vocabulary* by Appel and Muysken (1987) who also propose that *noncore* items include the very specific material and non-material culture and organization of a specific group; e.g., 'lawnmower', 'dictionary' and 'psychiatry'. Haugen (1969) pointed out that in more personal domains, such as religion, clothing and body parts, the immigrants of his study used fewer English than Norwegian words, whereas in the areas linked to American life they borrowed quite extensively from English. I adopt the concepts of semantic fields, *core* and *noncore* vocabulary. I assume for this study that the body parts, family names, nature and clothing semantic fields belong to the *core* lexicon and that the artifacts, food and the living things semantic fields belong to the *noncore* lexicon.

The semantic fields and their lexical items were chosen with the understanding that the selection of *core* and *noncore* fields was important, as well as the selection of objects particular to the Kaqchikel Maya culture. Most of the objects and drawings presented to the children, except for *sickle, tiger, sheep, deer,* formed part of the cultural and natural environment of the participants. Some of the ideas and drawings about Kaqchikel Maya objects were borrowed from one of the textbooks that the Mayan Language Academy (1994) published for the purpose of teaching reading and writing to Kaqchikel Mayas. Although the concept of a *core* lexicon attempts to predict borrowing patterns in sociolinguistic conditions of permanent language contact, *core* lexicon in Tecpán is permanently being impacted by

western items or objects that are named with loanwords or loan translations and also some native terms or Kaqchikel lexemes are being replaced by loanwords. Thus, Spanish loanwords are constantly being integrated and increasingly play an important role in the community's Kaqchikel lexicon. For instance, numbers and colors are a focal point of Ladino-Kaqchikel Maya relations. At the market, I had opportunities to listen to Kaqchikel conversations in which the prices, colors and names of products such as *banana* and *tomato* were mentioned in Spanish. Also, all the Kaqchikel monolingual mothers and some of the monolingual and bilingual children that we interviewed told us their ages in Spanish.

2.1.1 Terminology

In this section, I briefly describe the terminology that I use throughout this chapter. The terms *lexeme* and *lexical item* are here used interchangeably with the assumption that a lexeme is the smallest distinctive unit in the lexicon of a language, which may consist of a single word; e.g., Kaqchikel *pawiaj* 'hat', or more than one word; e.g., Kaqchikel *raqän ya'* 'river'. Lexical items from two different languages that name the same object are known as an *equivalent lexical pair*; this term and the term *equivalent pair* are used interchangeably. I assume that an *equivalent lexical pair* consists of two lexemes, one in Kaqchikel and one in Spanish. Also, following Jackendoff (1993), I assume that an *equivalent lexical pair* shares the same visual representation, the same conceptual structure and the same function. Furthermore, according to the distinctive features

proposed by Chomsky (1995), the *lexical pairs* in this study consist of lexemes that can be characterized by the feature [+N]. Thus, the lexemes in an *equivalent lexical pair* differ only in terms of their phonological structures. Finally, the data of this chapter concerns lexical and phonological representations of concrete objects that belong to the [+N] category.

Following Weinreich's (1900) compound model, I propose that the same conceptual structure and visual representation underlies the shared meaning of a Spanish-Kaqchikel lexical pair. For instance, figure 2.1 represents the lexical equivalent pair *kolaj-pelota*; hence, the lexemes in this equivalent pair have the same mental representation.

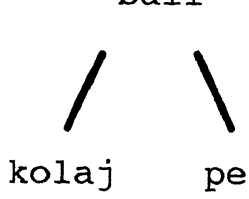


Figure 2.1 The organization of an equivalent lexical pair.

Moreover, the terms *equivalent lexical pair* or *equivalent pair* are not assumed to always denote an exact translation of each lexeme, because some lexical items cannot be translated exactly; for instance, *kaxlan wäy* refers to the object 'bread', but it literally means, 'Spanish tortilla'; and *kolaj* refers to the object 'ball', but it literally means 'circular or round instrument'. Even though, the exact translations of the lexemes *kaxlan wäy* and *kolaj* do not necessarily refer to a particular object, they are equivalent lexemes of the Spanish *pan* 'bread' and *pelota* 'ball'. Hence,

kaxlan wäy-pan and *kolaj-pelota* are equivalent pairs and each member of the pair is an *equivalent lexeme.* I assume that an *equivalent lexeme* is a lexical item of an *equivalent lexeme pair*, i.e., is a lexical item in Kaqchikel or Spanish that shares the same visual representation, the same conceptual structure, the same function and the same category [+N] as its counterpart in the other language, but differs in its phonological structure from its equivalent lexeme in the other language.

The terms *access* and *retrieve*, although both are psycholinguistic processes, are used in a particular manner in this study. The term *retrieve* is assumed to be the psycholinguistic process of 'finding and fetching' a lexical item. The term *access* is assumed to be the psycholinguistic process of 'coming to' a lexical item. I use this term in those particular situations of this study in which the speaker 'came to' a particular lexical item via its L2 equivalent term. Thus, I use term *access* to describe a specific organization of equivalent pairs, an organization that I call *L1 subordination* (see section 2.4).

The classifications of borrowings that I use here include: loanwords or loans, speech borrowings and nonce borrowings. It is important to note that Brown (1999:19) argued that to characterize words as being 'borrowed' or as 'loans' is just to use traditional metaphors of linguistics and that a more accurate approach is to describe borrowings or loanwords as 'copies'. However, in this study I still utilize these traditional metaphors of linguistics. Also, I follow Poplack, Sankoff and

Miller (1988:52), who conferred the status of loanwords only to those forms that occur frequently and are broadly used in the community and have attained a level of 'recognition or acceptance, if not normative approval'. Although for my study I did not interview the entire Tecpán community, I label as loanwords those lexical items that the majority of the adults as well as bilingual and monolingual children produced during the Kaqchikel task. Regarding speech borrowings, I have adopted Grosjean's (1982:334) definition:

> The phonological and morphological status is vague; the word is often used in parallel with the equivalent monolingual word (if such a word exists), and not all bilinguals use the borrowing in their everyday speech.

I assume that the term *nonce borrowing* describes that which occurs on the one occasion and is borrowed by one bilingual individual. Loanwords, speech borrowings and nonce borrowing may be phonologically integrated to the phonological system of the borrowing language, in this study I use the terms *phonological assimilation* and *nativization* interchangeably.

Finally, I follow Brown (1999) regarding the concepts of lexical acculturation and acculturated items. Lexical acculturation refers to the strategies of Native Americans and Europeans to name the various and novel items encountered in their cultural exchange (Brown 1999:3). Thus, an acculturated or introduced object is that which has been brought by Europeans and has been integrated in the cultural life of a community. Acculturated items are part of daily life of the

Kaqchikel community in Tecpán and as globalization continues, new items are constantly being introduced in this community.

2.2 The Data

The results discussed in this chapter are listed on tables separately for each group and in each semantic field in appendices A-E. Appendix A is the synthesis of the results for both the Kaqchikel and Spanish language tasks which are listed in appendices B and C. Appendix D lists each semantic domain and responses of each monolingual child for the Kaqchikel task and appendix E lists all the responses from the adults in each semantic field.

The data are discussed in terms of seven semantic fields: artifacts, food, animals, nature, clothing, body parts and people's names. Each semantic field is discussed separately and the equivalent lexical pairs that are included in each semantic field are listed alphabetically in Kaqchikel and the acculturated items are indicated with check marks. Furthermore, each semantic field is discussed for each bilingual child regarding the following: (1) equivalent pairs; (2) borrowings in Kaqchikel and Spanish; and (3) retrieval errors. All the results for these categories are rank-listed on tables for each bilingual child from the highest to lowest percentage in each semantic field. The numbers in subscript next to the children's names indicate the age of each child. The sections and tables on borrowings include discussion of the results from the monolingual children and adults.

The procedure followed to determine whether a child knew or had acquired an equivalent lexical pair that refers to a specific object was to compare the results in both the Kaqchikel and Spanish tasks. If the child retrieved the expected Kaqchikel equivalent lexeme during the Kaqchikel task and the Spanish equivalent during the Spanish task, then the child had acquired an equivalent lexical pair.

The sections on retrieval errors cover detail discussions on various of the several strategies that the children turned to when they did not know a particular lexical item and these strategies are: (1) they said 'I forgot', 'I don't know', or gave an inappropriate answer; (2) they borrowed the equivalent lexeme from the other language; (3) they named it with the relevant hypernym, co-hyponym, or merynym; (4) they borrowed the relevant hypernym, co-hyponym, or merynym from the other language; (5) they described the function of the object; and (6) they named the material from which the object is made. All of these strategies that the children used to fill in the gap of an equivalent pair were considered inappropriate responses and were counted as retrieval errors, except for (2) the borrowing of equivalent lexemes, which was analyzed separately from the other unsuccessful answers. Finally, after all semantic fields are discussed, two other important findings are dealt with and these concern phonological assimilation processes and the reorganization of equivalent lexical pairs.

2.2.1 Artifacts Semantic Field

Twenty items were selected for this semantic field and are listed on table 2.1; ten are traditional Kaqchikel-Mayan artifacts and the others are acculturated artifacts. According to Brown (1999) some of these artifacts are 'Old World' items that have been acculturated since colonial times.

Most of the acculturated items have been named with native terms, except for *xara* and *jos* which have been nativized from Spanish *jarra* and *hoz*. The lexical items denoting *window* and *ball* have been named by using the descriptive strategy (Brown 1999). It captures the more salient features of an object; for instance, Kaqchikel *ruwäch jay* 'window', literally 'eye of the house' and *kolaj* 'ball', kol+aj, literally 'circular instrument'. The lexemes *parabäl*, *qupibäl* and *tzi'babäl* are derived by affixing the suffix *–bäl* to the stems or roots. The derived lexeme indicates an instrument or a place of an action.

Table 2.1 Artifacts semantic field

Kaqchikel	Spanish	Gloss	Acculturated items
b'ey	camino	road	
b'ojo'y	olla	pot	
chakach	canasta	basket	
ch'at	cama	bed	
ikäj	hacha	ax	
jay	casa	house	
jos	hoz	sickle	√
ka'	piedra de moler	grinding stone	
kem	tejido	loom	
kolaj	pelota	ball	√
lem'et	botella	bottle	√
pak'a'ch	cuchara	spoon	√
parabäl	sombrilla/ paraguas	umbrella	√
qupib'äl	cuchillo	knife	
ruwäch jay	ventana	window	√
tuj	temascal	Mayan bath	
tzi'babäl	lapices	pencil	√
tzuy	tecomate	dry gourd	
xara	jarro/ pocillo	clay cup	√
wuj	libro	book	√

Some children used sombrilla and paraguas interchangeably; however, this is not a standard usage of these lexical items or the objects that they name: *sombrilla* is a parasol and *paraguas* an umbrella. Similarly, *some children used jarro and posillo as synonyms*, although *jarro* means 'clay cup/jar' and *pocillo* 'clay container'.

Since the artifacts semantic field is classified as belonging to the noncore lexicon, borrowings were expected to occur. However, the fact that there were as many Spanish borrowings as equivalent pairs for the group was an unexpected result. The average percentage of equivalent pairs was 39 percent and of Spanish borrowings was 38 percent. Borrowings of Kaqchikel lexemes during

the Spanish task also occurred, but 9 percent is a much smaller percentage. The average 13 percent in the error category was not expected either; most errors occurred at naming objects whose Kaqchikel lexical items were forgotten or seemed to have lost cultural value.

Table 2.2 The group's results in the artifacts field

Artifacts 20	% Equivalent Pairs	% Kaqchikel Borrowings	% Spanish Borrowings	% Errors
Ixmukane$_{11}$	70	---	20	10
Ixb'alam$_{10}$	50	5	25	20
Ervin$_{9}$	45	20	35	---
Kot$_{8}$	40	---	35	20
María Angélica$_{9}$	30	25	35	10
Tojil$_{9}$	25	15	45	15
Yaxum$_{8}$	25	10	50	15
Säqche'$_{8}$	25	---	60	15
Average percentages	39%	9%	38%	13%

Eighty-seven percent of the group scored at or below the 50th percentile and only the oldest child, Ixmukane, scored the highest percentage. She retrieved the most equivalent lexical pairs (14) and borrowed the fewest Spanish equivalents (4). In contrast, Säqche', Yaxum and Tojil borrowed the most Spanish equivalents (from 45 to 60 percent) and of these three Säqche knew the least Kaqchikel equivalents; he knew merely 25 percent of the Kaqchikel lexemes elicited. Although Ervin, Kot and María Angélica borrowed 35 percent in Spanish equivalents, Kot, the youngest of these three, knew 40 percent of the Kaqchikel lexemes. While the other two knew 45 and 60 percent respectively. Finally, Ixb'alam knew half of the equivalent lexical pairs elicited and borrowed 25 percent in Spanish equivalents.

There was little overlap in the equivalent lexical pairs that the children retrieved. The ones that they had in common constituted 40 percent of the 20 equivalent pairs that were elicited and these are listed on table 2.3. All or half of the children had acquired these pairs; the rest of these equivalent pairs had been acquired by one to three children and constituted 53 percent of this field.

Table 2.3 Eight lexical pairs in the artifacts field

Gloss	Kaqchikel	Spanish	No. of children
house	jay	casa	8
road	b'ey	camino	7
bed	ch'at	cama	7
loom	kem	tejido	7
pot	b'ojo'y	olla	4
basket	chakach	canasta	4
clay cup	xara	jarro	4
book	wuj	libro	4

Only the equivalent pair for *house* was retrieved by all eight bilingual children. The equivalent pairs for *road*, *bed* and *loom* were retrieved 87 percent of the group. Interestingly, the three artifacts that these equivalent lexical pairs refer to are part of the Kaqchikel Maya culture, which implies that they are of high frequency use. Although the same can be said of *pot*, *basket*, *clay cup* and *book*, fifty percent of the group retrieved the equivalent pairs that refer to these objects, which perhaps implies that these are competing with similar artifacts introduced by the Ladino culture. Also, for the referent *book*, it is connected to the school environment and, thus, to Ladino culture.

2.2.1.1 Kaqchikel Borrowings

The lexical items that the children borrowed were classified as speech or nonce borrowings. Interestingly, these borrowings correspond to items and activities that belong to the domain of the Kaqchikel Maya culture (see appendix C).

The Kaqchikel lexeme *tuj* 'Mayan bath' that was borrowed by 63 percent of the eight children is representative of a traditional Kaqchikel Maya activity. A *tuj* is like a small house or enclosed place with piled up stones that are heated with firewood for hours; buckets of water are thrown over the heated stones to produce steam. People sweat and bathe; then, after leaving the steam bath, or *tuj*, they rest and drink warm beverages. This activity is a collective one; entire families bathe in small groups, or different family members take turns. Although *temascal* is the Spanish equivalent lexeme for this activity, for these children the *tuj* refers to a place and an activity that is essentially Kaqchikel Maya, which explains why so many children borrowed the Kaqchikel lexeme during the Spanish language task.

Table 2.4 Kaqchikel borrowings in the artifacts field

Spanish	Kaqchikel	No. of Children
temascal 'Mayan bath'	tuj	5
taza 'clay cup'	xara	3
tecomate 'dry gourd'	tzuy	2
piedra de moler 'grinding stone'	ka'	2
olla 'pot'	b'ojo'y	1
canasta 'basket'	chakach	1
tejido 'loom'	kem	1

The *xara* 'clay cup', which was borrowed by 38% of the children, is also the traditional recipient that is used to drink, although metal and plastic cups, as well as glasses are replacing the clay cup. The *tzuy* 'dry gourd'--borrowed by 25 percent of the children--is a traditional container used to carry water. The *k'a'* 'grinding stone'--borrowed by 35 percent of the children--is the traditional Kaqchikel Maya instrument to grind certain foods. The *kem* 'loom'--borrowed by 13 percent of the group--is essential for making female clothing; and every Kaqchikel home has one. *B'ojo'y* 'pot', *chakach* 'basket', *kem* 'loom'--borrowed by 13 percent of the children-- are also native artifacts whose frequency of use is changing.

Although these objects as well as their lexical representations are part of Kaqchikel Maya culture, they are threatened as they compete with substitute objects from the Ladino culture. As Kaqchikel children in urban areas have less experience with the *tuj* 'Mayan bath', the *xara* 'clay cups', the *k'a* 'grinding stone', etc., the subordinate language looses not only objects and lexical items, but according to Farber (1978), the language looses a hold on the community. The lexical items for these artifacts are less commonly acquired, which causes lexical gaps and lexical replacement through borrowing. Interestingly, 75 percent of the children had forgotten the Kaqchikel lexemes for these items. Thus, a small percent had knowledge of these lexical items and borrowed them, while a larger percent had not acquired or had forgotten them.

2.2.1.2 Spanish Borrowings

Borrowing of acculturated items was expected, but not borrowing of native items. The borrowing average percentage of the bilingual group has been compared with that of the monolingual children and adult groups. The borrowing averages were: for the adults 32 percent, for the bilinguals, 38 percent and for the monolinguals 37 percent. It is important to note that in the adult group, it is the mothers, but not the grandmother, who were the principal borrowers of Spanish lexemes (see appendix E). Younger adults actively made lexical changes that the grandmother did not make. This indicated that there was an intragenerational lexical gap developing in the adult group. The fact that all groups have high borrowing percentages demonstrates that bilingualism is not the only factor that causes borrowings. The permanent linguistic pressure of Spanish and the lower status of Kaqchikel are also factors causing these intergenerational borrowing patterns.

The eight Spanish borrowings that the three groups had in common are listed on table 2.5 and the groups' columns are arranged from the oldest to the youngest generation. The numbers in the columns correspond to the number of children or adults that borrowed a particular lexeme. For instance, *leme't* 'bottle' was borrowed by three out of four adults, and by all bilingual and monolingual children (see appendices B, D and E). I consider these eight Spanish borrowings had the status of loanwords in these groups' lexicons because 75 percent of the adults borrowed them, i.e., these lexemes had achieved a certain level of recognition or acceptance among these three generations.

The Spanish equivalents that were borrowed by 100 percent of the bilingual children were *paraguas*, *cuchillo* and *botella*. *Ventana* 'window' was borrowed by 87 percent of the bilinguals; one of the children recognized it as part of a whole and labeled it *jay* 'house'. According to Brown's study (1999), 'Old World' items like *ventana* 'window' and *botella* 'bottle' were probably focus of Native-American and Euro-American interaction and in her study *bottle* had a borrowability index of 51 percent and *window* 27 percent. This high borrowability index continues to the present in Kaqchikel since 100 percent of the bilinguals, at least 83 percent of the monolinguals and 75 percent of the adults borrowed Spanish *ventana* and *botella*.

Table 2.5 Spanish borrowings in the artifacts field

Kaqchikel	Spanish Borrowings	Adults	Bilinguals	Monolinguals
parab'äl 'umbrella'	paraguas	3	8	6
qupib'äl 'knife'	cuchillo	3	8	6
leme't 'bottle'	botella	3	8	5
ruwäch jay 'window'	ventana	3	7	3
k'olaj 'ball'	pelota	3	7	5
tz'ib'ab'äl 'pencil'	lápiz	3	5	6
pak'a'ch 'spoon'	cuchara	3	5	6
wuj 'book'	libro	3	4	2

That the native items *qupib'äl* and *tz'ib'ab'äl* were named with Spanish equivalents was unexpected. Moreover, the Spanish *canasta* 'basket', *cama* 'bed' and *olla* 'pot' were considered speech borrowings because children mostly

borrowed them. Loanwords and speech borrowings point out to linguistic changes that are in progress within the community and within the families that participated in this study. For instance, the Spanish equivalent *cama* was borrowed by more monolingual children (33 percent) than bilingual children (12.5 percent). Moreover, in two families the older children retrieved the Kaqchikel equivalent, while the younger retrieved the Spanish equivalent or the equivalent pair. Table 2.6 summarizes these intergenerational and intragenerational changes; the subscript numbers indicate the age of the adults and children, the underlined forms are the Spanish borrowings and the lexemes under these forms are the Kaqchikel equivalents. Josefa is the mother of both Mercedes, a Kaqchikel monolingual speaker and María Angélica, a Kaqchikel-Spanish bilingual speaker. Dolores is the mother of both monolingual Lorena and Marvin. Both monolingual mothers and Mercedes retrieved Spanish *cama* during the Kaqchikel task and immediately after accessed *ch'at*. Lorena only retrieved the Spanish equivalent *cama*. María Angélica and Marvin retrieved Kaqchikel *ch'at*.

Table 2.6 Lexical changes between generations

Artifact	Josefa$_{24}$	Mercedes$_{6}$	Angélica$_{8}$
ch'at 'bed'	<u>cama</u> ch'at	<u>cama</u> ch'at	ch'at
	Dolores$_{28}$	Lorena$_{3}$	Marvin$_{7}$
ch'at 'bed'	<u>cama</u> ch'at	<u>cama</u>	ch'at

The important finding is that the older children, María Angélica and Marvin, appropriately retrieved *ch'at* during the Kaqchikel task, but that the mothers and Mercedes

retrieved the Spanish equivalent first. Moreover, monolingual Lorena, the youngest speaker, retrieved the lexeme *cama*, i.e., she had only learned the Spanish lexeme. This indicated that the changes in progress regarding the equivalent pair *ch'at-cama* are (1) that the Spanish lexeme is dominating over the Kaqchikel one in these mothers' lexicons; and (2) that the youngest generation is not acquiring the Kaqchikel lexeme. I suggest that due to the social pressure to speak Spanish, these mothers have switched from using Kaqchikel lexemes with the older children to using Spanish lexemes with the younger ones. These responses also indicated that this borrowing pattern was tied not only to bilingualism, since bilingual María Angélica retrieved the appropriate Kaqchikel lexeme, but also tied to sociolinguistic issues concerning permanent language contact with an economically and politically dominant language. New and old items gain more value in the dominant language. Richards (1998:99) noted that in the Kaqchikel community of San Marcos La Laguna:

> These lexical borrowings mostly represent terms for new cultural concepts and items, but that they are also used to replace native terms that have lost their "communicative power".

Lexemes also fall out of use due to socioeconomic reasons and the younger generations do not acquire them; for instance the *ikäj* 'ax' and the *jos* 'sickle' are falling out of use due to the changing economy of Tecpán; men are decreasingly working in agriculture and their children are not participating in it either. Monolingual and bilingual children produced examples of speech and

nonce borrowings to name objects such as the *ax*, *sickle*, *road*, *cup* and *house*. Because direct experience with objects like the *ax* within the linguistic and cultural domain of Kaqchikel is being reduced, it is most likely that some children learned the labels for some objects in Spanish at school.

Brown (1999:160) concluded that diachronic data indicate that native terms for introduced entities in earlier time states of Indigenous languages have tended to be replaced by European loans in later time states. The data in this study support this conclusion, specifically regarding the cases of *leme't* 'bottle' replaced by *botella*, *ruwäch jay* 'window' replaced by *ventana*. Moreover, this study also demonstrates that the lexical items that refer to native entities were also being replaced by specially the children and young adults with Spanish loans; for instance: *cuchillo* 'knife', *olla* 'pot', *chakach* 'basket' and *ch'at* 'cama'. Tecpán's sociolinguistic environment seems to pressure Kaqchikel Mayas to adopt Spanish lexemes that have more 'communicative' value in the dominant Ladino culture.

2.2.1.3 Inappropriate Answers

The inappropriate answers also indicated that economic and cultural changes affect the lexical repertoire that children acquire. The livelihood of Maya Kaqchikel men in Tecpán is no longer concentrated in agriculture; employment may be found in manufacturing, government and in the capital city. Hence, knowledge of some items related to agriculture and to the Maya Kaqchikel culture

seems to be decreasing in the younger generation due to their low frequency of use in the community and homes.

Table 2.7 summarizes the bilingual children's unsuccessful responses when naming four Maya culture items and an introduced item: *ax*, *sickle*, *dry gourd*, *grinding stone* and the *window* (see Appendices B and C). The important finding was that the different unsuccessful naming strategies that the children utilized provide evidence for a system of interrelated networks that semantic theory has recognized as types of paradigmatic relationships that include the hyponym, hypernym, co-hyponym and meronym. They also provide evidence in favor of Jackendoff's (1992) preference rule system, which combines information about form and function of lexical entries for functional nouns. In other words, the bilingual children provided lexemes in either Kaqchikel or Spanish that placed the object whose name they did not know in the appropriate interrelated semantic network. That is, they named the form, or they named the function of the lexical item.

The different unsuccessful naming strategies are organized in rows for both languages. The columns list the expected lexemes and the answers provided for both languages and these are rank-listed from the group's largest to smallest total percentage of inappropriate responses. For instance, regarding the object *sickle*, of the eight children, only one knew Kaqchikel *jos*, five said they had forgotten or did not know the name and the other three children provided: (1) a derived Spanish lexeme, *cortador* 'that which cuts,' from the action verb *cortar* 'to cut'; and (2) Spanish *hierro* 'iron', the name

of the material that the object was made of. These same strategies were used to name this object in Spanish, i.e., Spanish *hoz* was replaced with: (1) the Spanish co-hyponym *sierro* 'saw' with the incorrect gender ending; (2) the derived Spanish lexeme, *cortador* 'that which cuts'; and (3) the material *hierro* 'iron'. Thus, *jos-hoz* 'sickle' was the equivalent lexical pair least known by the children; 87 percent of the eight children did not know it. Ervin was the only child who knew it, probably because he had lived in a village most of his life.

More children knew Kaqchikel *tzuy* than its equivalent pair *tecomate* 'dry gourd'. Only Ervin and María Angélica knew this equivalent pair; these children were less urbanized than the rest. A child provided the Spanish co-hyponym *jarrito* 'little clay cup' during both the Kaqchikel and Spanish tasks and yet another child provided the Spanish verb *tomar* 'to drink' during both language tasks to indicate the function of the object.

Sixty-two percent of the children didn't know the equivalent pair *ka'-piedra de moler* 'grinding stone.' Interestingly, more girls knew the equivalent pair than the boys; one of the five boys and two of the three girls knew it. Nevertheless Ixb'alam provided the Spanish co-hyponym *moledor* 'grinder' and the Spanish *para moler* 'to grind' during both language tasks. Kot a boy provided the Spanish co-hyponym *molino* 'mill' during the Spanish task. Only, Ervin, María Angélica and Ixmukane knew the equivalent pair *ka'-piedra de moler*.

The Spanish lexemes of the last two equivalent pairs, *ikäj-hacha* 'ax' and *ruwäch jay-ventana* were better known by the children so they borrowed them to name the

object during the Kaqchikel task. Half of the group borrowed Spanish *hacha* 'ax' and 87 percent borrowed ventana (see table 2.5). However, Ixb'alam named the *ax* with the Spanish co-hyponym *machete* during both language tasks and María Angélica named the *window* in both languages with the meronyms Kaqchikel *jay* 'house' and Spanish *casa* 'house'.

Table 2.7 Percentages of inappropriate answers

Kaqchikel	**jos**	**tzuy**	**k'a**	**ikäj**	**ruwäch jay**
Forgot Don't know	62%	37%	50%	12%	
Co-hyponym		jarrito	moledor	machete	
Merynymy					jay
Function	cortador	tomar			
Material	hierro				
Total	87%	62%	62%	25%	12%
Spanish	**hoz**	**tecomate**	**piedra de moler**	**hacha**	**ventana**
Forgot Don't know	50%	50%	37%	12%	
Co-hyponym	sierro	jarrito	molino	machete	
Meronymy					casa
Function	cortador	tomar	para moler		
Material	hierro				
Total	87%	75%	62%	25%	12%

The children had not acquired the lexemes for items that were falling out of use or have lost cultural value, e.g., the ax, sickle and dry gourd (see appendices B and C). The only object on this list that was still an integral part of the daily life of Kaqchikel culture in Tecpán is the *k'a* 'grinding stone'. I saw it in every home I visited and I was told that there was one in the kitchen of every Kaqchikel Maya. There seemed to be both a gender difference and urban difference in the

maintenance of Kaqchikel *ka'*; most girls knew the lexeme, whereas most boys didn't, except for Ervin who used to live in a village.

2.2.2 The Food Semantic Field

Some borrowing was expected to occur in this noncore semantic field of 17 lexical items, especially when naming the 7 acculturated ones. Five of these have been identified as acculturated items from colonial times by Brown (1999): *apple*, *orange*, *onion*, *bread* and *candy*. All of these acculturated items were named with native Kaqchikel terms, except for *bread* and *candy*. The Kaqchikel lexical item for *bread* is the result of the spread in Mesoamerica of a loan translation from a Nahuatl compound consisting of *caxtillan* meaning castillian, Spanish or foreign, plus a language particular word for *tortilla* (Brown 1999:27). In Kaqchikel, is *kaxlan wäy* 'bread', literally "castillian tortilla". The Kaqchikel lexical item for *candy* is *kab'*, which literally means 'sweet' and is a polysemous lexical item, since it also means *sugar*, *sweet* and *candy*.

Table 2.8 The food semantic field

Kaqchikel	Spanish	Gloss	Acculturated Items
ch'op	piña	pineapples	
ïs	papas	potatoes	
ixkoya'	tomate	tomatoes	
ixim	maíz	corn kernels	
kab'	dulce	candy	√
kaxlan wäy	pan	bread	√
kinäq	frijoles	beans	
këq q'oq	sandía	watermelon	√
nimamix	manzanas	apples	√
oj	aguacate	avocados	
öj	elote	corn	
okox	hongo	mushroom	
saqmolo'	huevos	eggs	
saq'ul	bananos	bananas	√
xna'j	naranja	orange	√
xnakät	cebolla	onions	√
wäy	tortillas	tortillas	

The item *banana* is a loanword from English that occurs in Central American and Caribbean Spanish dialects. *Potatoes, tomatoes, corn, avocado* and *pineapple* are native to the Americas (Foster and Cordell 1992), but not all are native to the Tecpán region and some are considered acculturated items, such as the *potato* and *tomato*. These foods have been named with loanwords from Nahuatl *tomate* 'tomato' and Quechua *papas* 'potato', which are the names of the regions where these products originated.

The results for the bilingual group on table 2.9 show that the average percent of equivalent pairs was 42 and of Spanish borrowings was 57. In this semantic field, there were more Spanish borrowings than equivalent pairs for the group. Kaqchikel borrowing was minimal and there were no retrieval errors.

Table 2.9 The children's results in the food field

Food (17)	% Equivalent Pairs	% Kaqchikel Borrowings	% Spanish Borrowings
Ixmukane$_{11}$	65	-	35
Ervin$_{9}$	59	-	41
María Angélica$_{9}$	53	-	47
Ixb'alam$_{10}$	41	-	59
Säqche'$_{8}$	35	6	53
Kot$_{8}$	29	-	71
Tojil$_{9}$	29	-	71
Yaxum$_{8}$	29	-	71
Average percentage	42%		56%

Ixmukane, who, as in the artifacts semantic field, retrieved the most equivalent pairs and borrowed the least from Spanish, obtained the highest percent of 65. Ervin and María Angélica knew more equivalent lexical pairs than Ixb'alam and Säqche' since the latter group's borrowing average was 56 percent. The results of Kot, Tojil and Yaxum stand in sharp contrast with the rest of the group due to their 70 percent borrowing average in Spanish equivalents. These results demonstrate that the children's knowledge of this semantic field was dominated by their Spanish. This is a notable finding, especially when less than half (35%) of the referents were acculturated.

Table 2.10 demonstrates that 53 percent of the equivalent pairs were known by at least half of the bilinguals. All children retrieved the equivalent pair for beans. Eighty-seven percent of the children retrieved the equivalent pairs for *candy* and *tortillas*, while only 75 percent retrieved the equivalent pair for

corn kernels. Sixty-two percent--the greatest frequency of the group--retrieved the equivalent pairs for *bananas*, *avocado* and *mushroom*. Fifty percent retrieved the equivalent pairs for *bread* and *corn on the cob*.

Table 2.10 Nine lexical pairs in the food field

Gloss	Kaqchikel	Spanish	No. of children
beans	kinäq	frijoles	8
candy	kab'	dulce	7
tortillas	wäy	tortillas	7
corn kernels	ixim	maíz	6
bananas	saq'ul	bananos	5
avocado	oj	aguacate	5
mushroom	okox	hongo	5
bread	kaxlan wäy	pan	4
corn on the cob	öj	elote	4

The data showed that Kaqchikel lexemes for traditional food items such as *corn kernels*, *tortillas*, *avocado* and *corn on the cob* were not being maintained in some of the children's lexicons, since 100 percent retrieval was expected for these items in both languages. Moreover, these results indicate that for bilinguals Spanish borrowings were used to name acculturated and nonacculturated items.

2.2.2.1 Kaqchikel Borrowings

Kaqchikel borrowings hardly occurred in this field (see appendix C). Säqche' was the only child who borrowed the Kaqchikel equivalent *öj* 'corn on the cob' during the Spanish task. This sharply contrasted with the three children who borrowed the Spanish equivalent *elote* 'corn on the cob' to name this item (see section below).

2.2.2.2 Spanish Borrowings

The results in the Kaqchikel task were significant in that the bilingual children borrowed Spanish lexemes to name referents of native and traditional foods; for instance, *corn kernels*, *corn on the cob*, *avocado*, *mushroom*, *potatoes* and *pineapple*. The adult group borrowed the fewest Spanish equivalents (29%). Two mothers borrowed the most of the group, naming 35 percent of the 17 items with Spanish borrowings. The grandmother borrowed as well, although she borrowed 12 percent, the smallest borrowing percentage of the group (see appendix E). The bilingual group scored an average of 55 percent; three of its participants, who borrowed the most, named 71 percent of the foods with Spanish borrowings (see appendix B). The monolingual group had a borrowing average of 37 percent and one of its participants named 47 percent of the foods with Spanish borrowings (see appendix D).

The seven Spanish borrowings (47% of 17 lexemes) that the three groups had in common are listed on table 2.11. Interestingly, two of these borrowings refer to native foods: *potatoes* and *pineapple*. The first six Spanish borrowings clearly have the status of loanwords since 83 percent or more of the 18 participants borrowed them. In other words, these loanwords had achieved a level of acceptance among these three generations. The fact that *naranja* and *sandía* were borrowed by all the participants of the three groups indicates that their Kaqchikel equivalents are not being transmitted by the adults; thus, the bilingual and monolingual children are not acquiring the corresponding Kaqchikel lexemes. That

is, these three generations have only Spanish equivalents, which are being shared across both languages.

Table 2.11 Spanish borrowings in the food field

Kaqchikel	Spanish Borrowings	Adults	Bilinguals	Monolinguals
xna'j 'orange'	naranja	4	8	6
këq q'oq 'watermelon'	sandía	4	8	6
nimamixku' 'apples'	manzana	3	7	6
xnakät 'onions'	cebolla	3	8	6
ch'op 'pineapples'	piña	3	8	5
ïs 'potatoes'	papas	3	8	4
ixkoya' 'tomatoes'	tomate	-	8	4

The first six Spanish borrowings clearly have the status of loanwords since 83 percent of 16 participants borrowed them. In other words, these loanwords had achieved a level of acceptance among these three generations. Although only the children borrowed the lexeme *tomate*, I still consider it a loanword based on sociolinguistic evidence that I obtained at the market where I had the opportunity to listen to Kaqchikel transactions regarding the tomato. The merchants as well as the customers engaged in transactions in which the tomato was called by its Spanish lexeme, *tomate*, rather than its Kaqchikel equivalent, i.e., *ixkoya'*.

Examples of speech and nonce borrowings occurred in both children's groups. *Pan* 'bread', *elote* 'corn on the cob', *aguacate* 'avocado', *hongo* 'mushroom', *maíz* 'corn kernels' are examples of speech borrowings since only an average of two bilinguals provided them. Three bilinguals and one monolingual provided the lexeme banano. Examples of nonce borrowings were *tortillas* borrowed by one bilingual and a monolingual and *huevos*

'eggs' borrowed by one bilingual. Thus, except for *pan* 'bread', these borrowings were retrieved to name native foods that are culturally important. Moreover, the fact that the bilingual children mostly retrieved these speech and nonce borrowings suggests that their bilingualism played a significant role in these borrowing processes.

2.2.3 The Semantic Field of Living Things

It was expected that the children would borrow from Spanish when naming some of the seven acculturated items selected for this semantic field, which belongs to the noncore lexicon. Table 2.12 lists the twenty lexical items that were included in this semantic field and most of the living things that these refer to exist in the children's environment, except for the *tiger*, *sheep*, *deer* and *quetzal*.

Table 2.12 The living things semantic field

Kaqchikel	Spanish	Gloss	Acculturated Items
amolo'	mosca	fly	
aq	coche/cerdo	pig	√
äk	gallina	hen	√
äm	araña	spider	
balam	tigre	tiger	
ch'oy	ratón	mouse	
jut	gusano	worm	
karne'la	borrego	sheep	√
kär	pez/pescado	fish	
kej	caballo	horse	√
mama äk'	gallo	rooster	√
masat	venado	deer	
maq'uq'	quetzal	quetzal	
mes/siam	gato	cat	√
q'ol	chompipe/pavo	turkey	
sanik	hormiga	ants	
tz'i'	perro	dog	
umül	conejo	rabbit	
wakx	vaca	cow	√
xanän	sancudo	mosquito	

The living things that have been acculturated since the Spanish conquest include the *hen*, *pig*, *sheep*, *horse*, *rooster*, *cat* and *cow* (Brown 1999). The lexical items that refer to these animals are phonologically assimilated from modern and archaic Spanish lexemes. The *rooster* was given a descriptive label *mama' äk'* 'rooster' which literally means 'big hen'. The modern Spanish word for "pig" is *cerdo* and the archaic word is *coche* (Brown 1999:123). In Tecpán, both the modern and archaic Spanish lexemes are still in use. Although in other Spanish dialects, *coche* has been semantically displaced to denote *car*.

Karnela' 'sheep' was assimilated from Spanish *carnero*. Brown (1999) listed *carnero* 'sheep, mutton' as a Nahuatl term used after 1540 and *wakx* 'cow' from Spanish *vaca* (cf. Brown 1999:136 Tojobal *wakax*, Caddo *wa:kas*, Creek *wa:ka* and Choctaw *wa:k*.). Kaqchikel *wakx* 'cow' refers to both *cow* and *bull*. Kaqchikel *mes* was very likely adopted from the archaic Spanish lexeme *miz(o/a)*, which is documented in Caddo *múst'uh* and *ch'á:mis* (Brown 1999:136). *Siam* is a Kaqchikel synonym for the referent *cat*, which was used by a monolingual child.

The lexemes *kej* 'horse' and *masat* 'deer' are examples of nomenclatural change and they constitute marking reversals that result from shifts in cultural importance (Brown 199:30). The introduction of the horse through the Spanish conquest caused a marking reversal of *kej* 'deer' and today, *kej* refers to *horse* in a number of Mayan languages, including Kaqchikel. Currently, *masat*

is the lexeme used to signify 'deer' and is a loanword from the Nahuatl *maçatl* 'deer' (Brown 1999:96).

The Guatemalan Spanish dialect has *chompipe* as a lexical item to denote *turkey*, as well as *pavo*. *Pavo* is found in other dialects and refers to the animal's flesh used as food. *Chompipe* and *pavo* were interchangeable for some children. Similarly, Spanish *pez* 'fish' refers to the living animal and *pescado* 'fish' refers to the animal's flesh used as food and some children used these lexemes interchangeably to refer to the *fish*.

The results on table 2.13 show that all the bilingual children borrowed from Spanish and surprisingly they provided more Spanish borrowings than equivalent pairs. The average percentage of equivalent pairs was 44 percent and of Spanish borrowings was 47 percent. Sixty-two percent borrowed from Kaqchikel with an average of 7 percent and seventy-five percent made errors with an average of 11 percent.

Table 2.13 The group's results in the living things field

Living Things	% Equivalents Borrowings	% Kaqchikel Borrowings	% Spanish Borrowings	% Errors
Ervin$_9$	65	10	20	-
Ixb'alam$_{10}$	55	5	35	5
Ixmukane$_{11}$	55	-	30	10
María Angélica$_9$	50	10	40	-
Yaxum$_8$	40	-	50	10
Säqche'$_8$	35	-	65	10
Kot$_8$	25	5	65	10
Tojil$_9$	20	5	70	20
Average Percentage	43%	7%	47%	11%

Ervin scored the highest percent (65%) of the group; he retrieved 15 equivalent pairs and borrowed only three Spanish equivalents (20%). Ixb'alam and Ixmukane scored

55 percent; they borrowed an average of six Spanish equivalent lexemes. Of these three children, Ervin and Ixb'alam also borrowed an average of one Kaqchikel lexeme. María Angélica also borrowed Kaqchikel and Spanish equivalent lexemes and scored 50 percent in equivalent pair retrieval. Yaxum, Säqche', Kot and Tojil retrieved few equivalent pairs and borrowed the most Spanish equivalents. Of these four children, Säqche', Kot and Tojil borrowed 65 percent and over of Spanish equivalent lexemes, and, thus, demonstrated that this semantic domain for them was dominated by Spanish.

Table 2.14 shows that the group had only two equivalent lexical pairs in common and eight equivalent pairs were known by at least half of the group. The acculturated items and their corresponding equivalent lexical pairs (60%) seemed to be better known by the group. Only 40 percent of the list corresponds to equivalent lexical pairs that refer to animals native to the region --*tz'i'-perro, sanik-hormiga, ch'oy-ratón, umül-conejo*-- while, the other 60 percent of these lexical pairs refer to acculturated animals. The results indicate that there is little overlap in the children's lexical knowledge.

Table 2.14 Nine lexical pairs in the living things field

Gloss	Kaqchikel	Spanish	No. of children
cat	mes	gato	8
dog	tz'i'	perro	8
cow	wakx	vaca	6
pig	aq	cerdo	6
hen	äk	gallina	5
ants	sanik	hormiga	4
horse	kej	caballo	4
mouse	ch'oy	ratón	4
rabbit	umül	conejo	4
rooster	mama äk'	gallo	4

These data show that the Kaqchikel lexemes that refer to nonacculturated living things, like *deer*, *turkey*, *worm*, *fly*, *fish*, *um*, *tiger* and *quetzal* were not being maintained in equivalent pairs by the majority of the children. The lack of equivalent pairs for some of the items was compensated with either Kaqchikel or Spanish loanwords. However, as will be shown in the next sections, most of the borrowings were from Spanish (see appendix B).

2.2.3.1 Kaqchikel Borrowings

Three Kaqchikel equivalent lexemes were borrowed during the Spanish task (see appendix C). These borrowed lexemes show that some children had not yet acquired their Spanish equivalents. Ervin, Kot and Tojil (37% of the group) borrowed *q'ol* 'turkey', perhaps, because it is not an acculturated living thing. On the other hand, *karne'la* 'sheep' is an acculturated living thing, but 25 percent of the group had not yet acquired its Spanish equivalent. Finally, *amolo'* 'fly' was borrowed by María Angélica. The latter example could be considered a nonce borrowing and the former two could be considered speech borrowings.

2.2.3.2 Spanish Borrowings

The bilingual children again borrowed the most Spanish equivalents; its high 47 percent in Spanish borrowings was unexpected, especially when less than half (35%) of the referents were acculturated. Half of the group borrowed over half of the 20 lexemes of this field. The monolingual group had a borrowing average of 25 percent and only one child named half of the 20 Kaqchikel lexemes with Spanish borrowings (see appendix D). The adult group borrowed the fewest Spanish equivalents (15%). Two mothers borrowed the most of the group, naming 20 percent of the 20 items with Spanish borrowings. The grandmother borrowed as well, although she borrowed 5 percent, the smallest borrowing percentage of the group (see appendix E).

The seven Spanish borrowings that the three groups had in common are listed on table 2.15, which shows that in this field the groups had fewer borrowings in common than in the *artifacts* and *food* semantic fields. Interestingly, 35 percent of the Spanish borrowings were retrieved to name non-acculturated living things.

Table 2.15 Spanish borrowings in the living things field

Kaqchikel		Spanish Borrowings	Adults	Bilinguals	Monolinguals
xanän	'mosquito'	sancudo	3	8	5
maq'uq'	'quetzal'	quetzal	3	7	6
b'alam	'tiger'	tigre	3	7	5
kär	'fish'	pez/pescado	1	7	5
äm	'spider'	araña	-	6	3
masat	'deer'	venado	2	5	1
umül	'rabbit'	conejo	1	4	3

The first three examples had achieved a certain level of acceptance and clearly had the status of loanwords.

Seventy-five percent of the adult group borrowed Spanish *sancudo*, *quetzal* and *tigre*. In other words, the younger adults and at least 83 percent of all the children borrowed these Spanish lexemes. However, it is not so clear that the last four Spanish lexemes have the status of loanwords since only 44 percent of the three groups borrowed them and most importantly the adults hardly borrowed them; for instance, *pescado* 'fish' was borrowed by one adult and *araña* 'spider' was borrowed by none.

Both children's groups provided speech and nonce borrowings; however, the bilingual children borrowed more from Spanish than the monolingual children. Six speech borrowings were provided by an average of three children from both groups and these were: *gusano* 'worm', *mosca* 'fly', *gallina* 'hen', *ratón* 'mouse', *cerdo/coche* 'pig' and *vaca* 'cow'. An average of three bilinguals provided five nonce borrowings these were: *hormiga* 'ant', *pavo* 'turkey', *caballo* 'horse', *oveja* 'sheep', *gallo* 'rooster' and finally *gato* 'cat' was provided by a monolingual child. The importance of these speech and nonce borrowings is that they demonstrate that bilinguals borrowed from Spanish more than the adults, showing that either they had replaced the equivalent Kaqchikel lexemes or had not acquired them. Interestingly, this latter scenario surfaced in the data of only one monolingual child.

The borrowings that occurred in this semantic field support Brown's conclusion that acculturated living things in general tend more powerfully than imported artifacts 'to be labeled by European loans in Native American languages' (1999:160). The data exemplified

replacement in progress since the Spanish lexemes for naming the *pig*, *chicken*, *horse* and *rooster* were borrowed by the children and not the adults. Moreover, the borrowings demonstrate that the bilingual children were also naming native living things with Spanish lexemes most frequently, which indicates that bilingualism is an important factor in the analysis of borrowing patterns for the items included in this semantic field.

The participants presented significant lexical variation showing that lexical changes occur due to language contact and to internal changes in the language. The first lexical variation that surfaced from these data concerned two equivalent pairs: *kej-caballo* 'horse', of which *kej* represents a marking reversal; and *masat-venado* 'deer' (see section 2.2.3). Five of the eighteen participants (28%) retrieved *kej* to name the *deer*, instead of retrieving *masat*, which suggests that this marking reversal had not been completed in some Kaqchikel communities. These differences are summarized and organized from the oldest to the youngest group in table 2.16. The numbers in parentheses indicate the number of participants who borrowed that specific lexeme.

Interestingly, those participants who retrieved either *masat* or *kej* were related. Juana and two of her grandchildren retrieved *masat*, while the two mothers, Dolores and María Reymunda and their children retrieved *kej* instead of *masat*.

Table 2.16 Variations of the Kaqchikel lexeme *masat*

Animal	Adults	Bilinguals	Monolinguals
masat 'deer'	masat (1) kej (2) venado (1)	masat (2) kej (1) venado (5)	- kej (3) venado (1)

The bilingual and adult groups demonstrated that *kej* and *masat* co-exist in the Kaqchikel language and that the marking reversal of *kej* had probably not been completed in some speech communities. I suggest that Dolores and María Reymunda produced *kej* rather than *masat* because they had lived in a village with their families before living in Tecpán. That is, the marking reversal of *kej* had probably not been completed in their village. Perhaps, this marking reversal will not be completed, since borrowing of the Spanish equivalent *venado* is already occurring. This is demonstrated by the fact that 44 percent of the three groups borrowed Spanish *venado*. Also, of the three groups, the bilinguals borrowed it the most, i.e., 62 percent of this group borrowed it. Finally, another possibility suggested by the results listed on table 2.16 is that, perhaps, *masat* was being lost and *kej* was being recovered, as it was the original name for the *deer*.

Another equivalent pair that showed significant variation is *aq-coche/cerdo* 'pig' due to the already mentioned Spanish archaic form *coche*. During the Spanish task, half of the bilingual children retrieved *coche and* the other half retrieved *cerdo*. Interestingly, the archaic and modern forms coexist in Tecpán and the bilingual children have acquired one or both forms. In other words, Spanish *cerdo* has replaced Kaqchikel *aq*, and *cerdo* and *coche* Spanish forms co-exist with each other. *Cerdo* was marked as a Kaqchikel lexeme and *coche* as a Spanish lexeme.

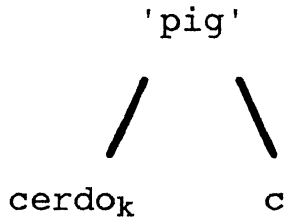


Figure 2.2 A Spanish lexeme assigned to L1 and L2

Monolingual children have also acquired *coche* and *cerdo*; however, they showed intragenerational differences. One monolingual retrieved both forms and the youngest monolingual (2;00) retrieved only the modern form *cerdo* (see appendices C and D). These intragenerational differences are summarized on table 2.17 and were best exemplified by bilingual María Angélica, and monolingual Mercedes and Ixyamanik.

Table 2.17 The acquisition of two Spanish forms for *pig*

	Spanish task	Kaqchikel task
Ma. Angélica$_8$	coche	-
Mercedes$_6$	-	coche cerdo
Ixyamanik$_2$	-	cerdo

These children demonstrated a continuum in the changes of the Spanish lexical form that labels the object *pig*. Bilingual María Angélica produced the archaic form. Mercedes has acquired both forms and Ixyamanik, from the youngest generation, only acquired the modern form *cerdo*. These two monolinguals, in fact, replaced the Kaqchikel equivalent, Mercedes with two synonyms, *coche* and *cerdo*, and Ixyamanik with the modern form *cerdo*.

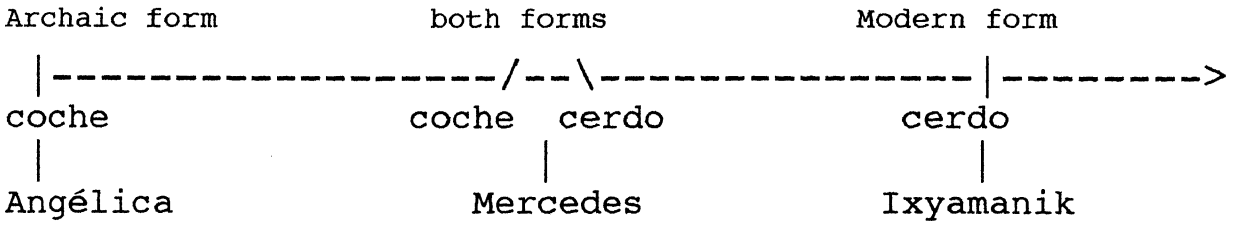


Figure 2.3 Lexical changes for the lexeme *coche*

Thus, the oldest child, María Angélica, who acquired the archaic form, represents the beginning of the continuum and Ixyamanik, who acquired only the modern form, represents the end of the continuum. Mercedes represents the middle point of the continuum; she knew both forms. The process of lexical acquisition and change will probably continue in these children. I suggest that María Angélica will acquire the modern form *cerdo*, but that Ixyamanik will not acquire the archaic form *coche*. Logically, after some time, the lexeme *coche* will fall out of use or will acquire a different conceptual structure, as it has in other Spanish dialects. Thus, bilinguals (Kaqchikel-Spanish) and monolinguals (Kaqchikel or Spanish) will eventually only acquire the modern lexeme *cerdo*.

Those lexical pairs that refer to the hen and rooster, which are relational opposites best exemplify the instability of lexemes that form equivalent lexical pairs. Kaqchikel *äk* 'hen' and *mama' äk* 'rooster' were replaced by Spanish borrowings, but which were not, in all cases, the standard equivalent lexemes *gallina* and *gallo*. In some cases, these Spanish lexemes were modified by other lexemes, or the standard forms were morphologically changed. Table 2.18 summarizes the responses for six bilingual children and it is divided into sections for each language. The columns list the

name and responses of each child and the rows list the expected the lexical items in each language. Morphologically or phonologically ungrammatical lexemes appear in bold face and borrowings are underlined.

Table 2.18 Variations of *gallina, gallo* and *pollo*

Kaqchikel	Ixb'alam	Ixmukane	Tojil	Säqche'	Kot
äk 'hen'	äk	äk	pollo	**gallino**	jun gallina
mama' äk' 'rooster'	un gallo	mama' äk'	mama'pollo	**gallino**	el papá 'the father'
Spanish	Ixb'alam	Ixmukane	Tojil	Säqche'	Kot
gallina 'hen'	pollo	la mamá pollo	mamá pollo	pollo	jun gallina
gallo 'rooster'	gallo	gallo	**polló**	gallo	el papá 'the father'

The Spanish lexical item *pollo* 'chick/chicken' was retrieved during both language tasks by 50 percent of the children. Besides producing *pollo* by itself, three complex forms were produced with *pollo*. The first form consisted of Kaqchikel *mama'* 'big' and Spanish *pollo* and was produced to name the rooster. In this case, *mama' pollo* literally means 'big chicken' and it is semantically similar to Kaqchikel *mama' äk'* 'rooster', which literally means 'big hen'. The second form was produced with Spanish *mamá* 'mother' and *pollo*; *mamá pollo* literally means 'mother chicken' and was produced to name the hen during the Spanish task. The third form consisted in displacing the stress on the first syllable to the final syllable, resulting in *polló* and was produced to name the rooster during the Spanish task.

The critical difference between *mamá pollo* 'hen' and *mama' pollo* 'rooster' is not only referential, but is morphological and phonological as well. *Mama' pollo*

'rooster' is a complex form integrated with elements of both Kaqchikel and Spanish, while *mamá pollo* 'hen' is only integrated with elements of Spanish. Also, Kaqchikel *mama'* has final syllable stress with a glottal stop in the syllable's coda, whereas Spanish *mamá* has only final syllable stress. For instance, Ixmukane retrieved the mixed form *mama' pollo* during the Kaqchikel task and *mamá pollo* during the Spanish task. *Pollo* was the common denominator of the forms that half of the children retrieved to name the *hen*.

Of the five children listed on table 2.18, Tojil was the most creative at using the Spanish lexeme *pollo*, which he produced in four different combinations. He was clearly compensating for his lack of knowledge of the relevant equivalent pairs. Säqche' also compensated for his lexical gap by making *gallina* 'hen' into the masculine form *gallino* in order to name the *rooster* during the Kaqchikel task. However, *gallino* is not an acceptable form in Spanish; the standard form is *gallo* 'rooster'. Kot also named the *rooster* with a non-standard form; he produced the Spanish phrase *el papá* 'the dad' during both language tasks.

Of the eight bilinguals, five children retrieved *äk*, four *gallina*, four retrieved *mama' äk* and six retrieved *gallo*. Hence, Kaqchikel *äk* 'hen' and Spanish *gallo* 'rooster' were the lexemes that the group knew best (see appendix A). Interestingly, table 2.19 shows that the highest percentages correspond to the relational opposites, one in each language. That is, the children knew best Kaqchikel *äk* 'hen' and Spanish *gallo* 'rooster'.

Table 2.19 Percentages of relational opposites

Relational Opposites	Kaqchikel	Spanish
Hen	**62%**	50%
Rooster	50%	**75%**

A possible explanation is that these two lexemes are phonologically and morphologically simpler and more salient; hence, they are easily stored and maintained in the bilinguals' lexicons. Interestingly, these results contrast sharply with the monolingual children and the adults. These two groups did not borrow nor produced complex forms from both languages. Eighty-three percent of the monolingual children retrieved both Kaqchikel *äk* 'hen' and *mama' äk 'rooster'*, and a 100 percent of the adult group also retrieved *äk* and *mama' äk* (see appendices D and E).

2.2.3.3 Inappropriate Answers

The average percentage of inappropriate answers for the group in this field was 8 percent, which is due mostly to the problems in retrieving the equivalent pairs for the *hen* and *rooster* (see table 2.19). Also, three of the children said that they had forgotten the names for *sheep* in both languages and one child named the *ant* with the hypernym *insect* in Spanish during both language tasks (see Appendix A).

2.2.4 The Nature Semantic Field

According to Appel and Muysken's (1987) this semantic field belongs to the core lexicon; they proposed that the nature semantic field is basic to any human culture, e.g., water, sun and rain are integral part of peoples'

daily lives. Hence, borrowing was not expected to occur in this core semantic field, whose 14 lexical items are listed on the table below.

Table 2.20 Nature Semantic Field

Kaqchikel	Spanish	Gloss
che'	árbol	tree
ik'	luna	moon
jop	lluvia	rain
juyu'	montaña	mountain
kaq'iq'	viento	wind
kotz'ij	flores	flower
koyopa'	rayos	lightning
q'aq	fuego	fire
q'ij	sol	sun
raqän ya'	río	river
ruxaq che'	hoja de árbol	tree leaf
si'	leña	fire wood
sutz'	nube	cloud
ya'	agua	water

In this list, there are two Kaqchikel compounds, *raqän ya'* and *ruxaq che'*. The lexeme for river is Kaqchikel *raqän ya'*, which consists of the possessive morpheme *-r* attached to *aqän* 'legs' and the lexeme *ya'* and this compound literally means, 'its legs of the water'. The *leaf* is named with Kaqchikel *ruxaq che'*, which also consists of *-ru*, the bound possessive morpheme, which attaches to the root *xaq* 'leaf' and this in combination with the lexeme *che'* 'tree' literally means 'its leaf of the tree'.

Table 2.21 shows the results for each bilingual child. The group's average percentage in the retrieval of equivalent pairs was 53 percent. The group's 37 percent average in Spanish borrowings was high, especially since this field and the lexical items included in it belong to the core lexicon. In contrast, a small 4 percent of Kaqchikel borrowings occurred. The

error percentage of 8 was also high; however, for most of the children, it was due to the merging of the lexemes that refer to *water* and *river*.

Table 2.21 The group's results in the nature field

Nature	% Equivalent Pairs	Kaqchikel Borrowings	Spanish Borrowings	Errors
Ervin9	71	7	14	7
Ixmukane11	71	-	21	7
María Angélica9	57	7	29	7
Ixb'alam10	50	7	36	7
Yaxum8	50	7	36	7
Tojil9	43	-	50	7
Säqche'8	36	-	50	14
Kot8	29	-	64	7
Average percentage	51%	3%	37%	8%

These results demonstrate that the children generally had better knowledge of the fourteen equivalent pairs that were elicited. Ervin and Ixmukane scored 71 percent; they retrieved 10 equivalent lexical pairs, the most equivalent pairs of the group. Ervin borrowed one Kaqchikel equivalent and two Spanish equivalents, while Ixmukane borrowed three Spanish ones. Ixb'alam, María Angélica and Yaxum scored at or above the 50th percentile; they borrowed more from Spanish than from Kaqchikel. In contrast, Tojil, Säqche' and Kot retrieved the fewest equivalent pairs (6-4) and provided more than half of expected Kaqchikel lexemes in their Spanish equivalents. All the children committed at least one error and Säqche' committed two. It will be shown that all these children had problems with a particular equivalent lexical pair.

In this semantic field, there was more overlap in the children's lexical knowledge; eight equivalent pairs

(57%) were known by at least 62 percent of the group. Table 2.22 shows that only two equivalent pairs, *ya'-agua* 'water' and *kotz'ij-flor* 'flower', were retrieved by 100 percent of the children. The next two equivalent pairs, *che'-árbol* 'tree' and *si'-leña* 'fire wood', were retrieved by 87 percent of the children.

Table 2.22 Eight lexical pairs in the nature field

Gloss	Kaqchikel	Spanish	No. of children
water	ya'	agua	8
flower	kotz'ij	flor	8
tree	che'	árbol	7
fire wood	si'	leña	7
fire	q'aq	fuego	6
sun	q'ij	sol	6
rain	jop	lluvia	5
tree leaf	ruxaq che'	hoja	4

Since 100 percent retrieval had been expected for all the items in both languages, these data shows that even core lexical items were not being maintained in these children's lexicons. Equivalent pairs for basic nature objects such as *tree*, *firewood*, *fire*, *sun*, *rain* and *leaf* were replaced by their Spanish equivalents instead. This finding is discussed further in the following sections.

2.2.4.1 Kaqchikel Borrowings

Kaqchikel borrowings constituted a small 3 percent of all the lexemes provided by the children during the Spanish task in the nature semantic field. The Kaqchikel lexemes for firewood (*si'*), wind (*kaq'iq'*) and moon (*ik'*) were the equivalent lexemes that were borrowed. These borrowings indicate that the children had not yet acquired the Spanish equivalents.

2.2.4.2 Spanish Borrowings

The results of the Kaqchikel task were significant in that the bilingual children borrowed Spanish lexemes to name core lexical items. They also borrowed more Spanish lexemes than the monolingual children and adults. The bilinguals scored an average of 55 percent in Spanish borrowings. Three children of the group borrowed the most; they named an average of 54 percent of the objects with Spanish borrowings (see table 2.23). In comparison, the monolingual children had a borrowing average of 15 percent and two children borrowed the most and had an average of 24 percent in borrowings. The adults named an average of 14 percent of the elicited items with Spanish borrowings and half of the group provided an average of 21 percent of Spanish borrowings for the 14 Kaqchikel lexemes that were expected. Thus, these three groups borrowed from Spanish to name lexical items during the Kaqchikel task.

It was found that all participants had fewer borrowings in common than in the previous semantic fields. Table 2.23 lists the borrowings that the groups had in common (see appendices B, D and E). Only, Spanish *rayo* 'lightning' or its plural form *rayos* were retrieved by most of the participants. Eighty-seven percent of the bilingual children, 83 percent of the monolingual children and 75 percent of the adults borrowed this Spanish equivalent.

Table 2.23 Spanish borrowings in the nature semantic field

Kaqchikel	Spanish borrowings	Adults	Bilinguals	Monolinguals
koyopa' 'lightning'	rayo	3	7	5
ruxaq che' 'tree leaf'	hoja	1	4	-
jop 'rain'	lluvia	2	2	-

The first example clearly had the status of a loanword since 75 percent of all the participants borrowed it. The situation is not so clear with the lexemes *hoja* and *lluvia*, which were borrowed by less than half of all the participants. Thus, I suggest that *hoja* and *lluvia* were moving toward becoming loanwords for these three generations and, perhaps, for the community as well.

Interestingly, the results on the relational opposite pair *moon-sun* illuminate important aspects of the internal organization of a bilingual's lexicon. For instance, Ixb'alam retrieved the relational opposite *moon* in Kaqchikel (*ik'*), when she attempted to name a drawing of the sun. Immediately after, she retrieved the Spanish equivalent *sol* 'sun' in the phrase *jun sol*, of which *jun* 'one' is a Kaqchikel lexeme and *sol* 'sun' is the Spanish equivalent of *q'ij*, the Kaqchikel lexeme that was expected (see appendix A and C). In other words, Ixb'alam was not able to retrieve Kaqchikel *q'ij* 'sun'; she was only able to retrieve the Spanish equivalent *sol* 'sun' by accessing first the relational opposite, i.e., the moon in Kaqchikel, *ik'*. Thus, one of the lexical items of the relational opposites *moon-sun* seemed to be represented in one of the two languages in the lexicon of Ixb'alam. The lexical item for the *moon* was represented in Kaqchikel and the one for the *sun* in Spanish.

The monolingual and bilingual children provided other borrowings whose status is not clear but the borrowing percentages were significant, particularly for the bilingual group. For instance, Kaqchikel *juyu'* 'mountain' is currently a polysemous word since it originally meant 'hill' and now its meaning has been extended to name *volcanoes* as well. This means that *juyu'* has three Spanish equivalents. Furthermore, by analogy, some bilinguals have extended semantically the meanings of the Spanish co-hyponyms *monte* 'hill' and *volcán* 'volcano' to refer to *montaña* 'mountain'. During the Kaqchikel task, thirty-seven percent of the bilingual group borrowed Spanish *montaña* 'mountain', while *monte* and *volcán* were borrowed by 25 percent of the group. In other words, 87 percent of the group borrowed a Spanish equivalent of the Kaqchikel lexeme *juyu'*, which refers to mountain, hill and volcanoe. In addition, half of the monolingual children also borrowed one of the Spanish equivalents, i.e., *montaña* 'mountain', *monte* 'hill', or *volcán* 'volcanoe'.

Other borrowings include the lexemes that refer to the *cloud, wind, fire* and *sun*. Seventy-five percent of the bilinguals and 16 percent of the monolinguals borrowed Spanish *nube* 'cloud' instead of producing the expected Kaqchikel equivalent lexeme *sutz'*. Also, rather than naming the *wind* with Kaqchikel *kaq'iq'*, the Spanish synonym *aire* 'air' was retrieved by 37 percent of the bilinguals and 16 percent of the monolinguals. Only 25 percent of the monolinguals retrieved the appropriate Spanish equivalent *viento* 'wind'. *Q'aq* 'fire' and *q'ij* 'sun' were better known by the children and their Spanish

equivalents *fuego* 'fire' and *sol* 'sun' were borrowed by 21 percent of both children's groups.

Two nonce borrowings also occurred, Spanish *árbol* 'tree' and *leña* 'firewood'. One member of each group, i.e., 16 percent of all 18 participants, provided *árbol 'tree'*. *Leña* was provided by only one adult; however, this borrowing is significant, despite its status as a nonce borrowing because firewood is essential for the daily routine of Kaqchikel homes, e.g., meals are prepared with it, as well as Mayan baths.

2.2.4.3 Inappropriate Answers

Most of the children provided the inappropriate answer to name *river* in Kaqchikel; they named it with the Kaqchikel lexeme for water, *ya'*. This is an interesting finding in that two Kaqchikel lexemes seemed to have been merged in 87 percent of the bilingual children's lexicons. Moreover, every monolingual child also provided *ya'* instead of *raqän ya'* and half of the mothers did as well (see appendices B, D and E). Thus, I suggest that the lexeme *raqän ya'* 'river' has merged with the superordinate lexical item *ya'* 'water' in the lexicons of the majority of the participants. Perhaps, this is also due to a process of simplification since *ragän ya'* is a compound in which the first lexeme is inflected with the ergative possessive form. Also, this merging process has resulted in *ya'* becoming a polysemous lexeme in Kaqchikel, thereby reducing the size of the speakers' lexicons.

I suggest that the bilingual children have carried over, by analogy, this merging process onto Spanish. In

other words, *río* 'river' and *agua* 'water' were merged by some of the bilingual children (see appendices B and C):

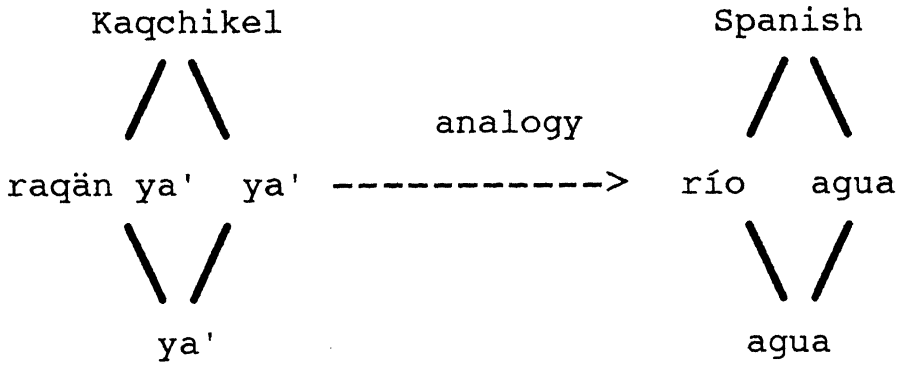


Figure 2.4 Merging of Kaqchikel and Spanish lexemes

Those bilingual children who responded with *río* 'river' to name the referent *river* during the Spanish task constituted thirty-seven percent and those who responded with *agua* 'water' instead of *río* constituted 62 percent of the group. Thus, the size of the lexicon has been reduced for the latter group; these bilinguals knew one equivalent pair, namely *ya'-agua* 'water', to refer to the objects *river* and *water*.

Other answers considered inappropriate were *tormenta* 'storm' and *truenos* 'thunder', which were retrieved by Säqche' to name the natural element *lightning* during both language tasks. The Spanish borrowings that Säqche' retrieved were meronyms and these point out at the internal organization of the lexicon, particularly, the lexical relations between parts of the whole. Säqche' first retrieved the lexeme for the whole, Spanish *tormenta* 'storm', then he retrieved a part of the whole, Spanish *truenos* 'thunder', but did not retrieve another part of the whole (storm), *lightning*. During the Spanish

task, Säqche' also retrieved *truenos* 'thunder', which indicated that he did not know all the parts that make up a storm and specifically he did not know lightning in either language; however, his lexicon was organized in such manner that he did know that the lexeme in question was a meronym. That is, he knew that *lightning* was a component of a storm, although he did not know its label.

2.2.5 Clothing Semantic Field

Ten clothing items were selected for this semantic field, which was also considered to belong to the core lexicon. Nevertheless, borrowing was expected to occur since McKenna Brown 1998 has documented changes in the clothing practices of some of the Kaqchikel-Maya communities. Changes have taken place in the clothing practices of men; however, women have been more resistant to change. They still use the traditional attire of a hand-woven top and a hand-loomed fabric wrapped as a skirt that is tied with a belt that is also hand-loomed.

This traditional female attire is changing in some Kaqchikel regions due to the high cost of materials and the time required to make the garments. Hand-woven tops have particularly become the target of Ladino influence; for instance, women in San Antonio Aguas Calientes earning wages were turning to inexpensive manufactured blouses (McKenna Brown 1998:110). Currently, sweaters and shoes are the nontraditional items that indigenous women and girls wear. Also, one can buy sweaters made in Korea or China at the market in Tecpán.

Men mostly wear western clothing, and the traditional Kaqchikel pants and shirt are worn at

important events, such as weddings and other ceremonial occasions. During my visits, I saw on the streets only a handful of older men in traditional attire. On other occasions when I saw more men in traditional attire were open-market days, when Mayas from other regions go to Tecpán to sell their produce. I also saw men wearing their traditional attire at a wedding.

Table 2.24 Clothing semantic field

Kaqchikel	Spanish	Gloss	Acculturated Items
xajab	zapato	shoes	√
kamixa'	camisa	shirt	
koton	suéter	sweater	√
pawiaj	sombrero	hat	
po't	güipil	female Mayan top	
su't	servilleta	head scarf	
tzatz	gorra	cap	√
ximb'äl	faja	female Mayan belt	
uq	corte	Mayan skirt	
wexaj	pantalones	pants	√

Two of the fourteen lexical items listed on table 2.24 are identified by Brown (1999) as being native to both the New and Old Worlds, i.e., *hat* and *shirt*. However, the Spanish lexeme *camisa* 'shirt' was borrowed during colonial times. It is listed in Coto's XVII century dictionary of Kaqchikel as *camissa* and in the 1998 dictionary of the *Proyecto Lingüístico Francisco Marroquín* is listed as the phonologically assimilated loanword *kamixa'*. Thus, the modern Spanish lexeme for the native object *shirt* is *kamixa'*, an assimilated loanword.

Both *corte* 'skirt/piece of fabric' and *servilleta* 'scarf/napkin' are examples of semantic extension in the Spanish dialect of Tecpán, perhaps due to their semantics in Kaqchikel. *Su't* 'scarf' the equivalent of Spanish

servilleta is listed in De Coto's XVII century dictionary as referring to *handkerchief* and *napkin*. Currently Kaqchikel *su't* is a polysemous lexeme with meanings or referents for *napkin*, *handkerchief*, *rag* and *scarf*. Thus, *servilleta*, which in some Spanish dialects means 'piece of fabric used to clean one's mouth', but in the Kaqchikel Maya community it has been extended to also mean 'piece of fabric used to cover tortillas'. Moreover, *corte*, the Spanish equivalent of *uq* 'Mayan skirt', originally refers to the action of cutting fabric, or to the fabric used to make a suit. Hence, Kaqchikel speakers have extended its meaning to include and refer to a Mayan skirt.

The results listed in table 2.25 indicate that the bilingual group had better knowledge of the equivalent pairs elicited for this semantic field. The group produced an average of 51 percent in equivalent pairs and 41 percent in Spanish borrowings. This Spanish borrowing average was high in comparison with the small 6 percent of Kaqchikel borrowings. Finally, the group hardly committed errors; only one child committed an error.

Table 2.25 The group's results in the clothing field

Clothing	% Equivalent Pairs	Kaqchikel Borrowings	Spanish Borrowings	Errors
Ixb'alam$_{10}$	80	-	10	10
Ixmukane$_{11}$	70	9	20	-
Ervin$_9$	60	-	40	-
María Angélica$_9$	50	10	40	-
Yaxum$_8$	50	10	40	-
Säqche'$_8$	40	10	50	-
Kot$_8$	40	10	50	-
Tojil$_9$	20	-	80	-
Average percentages	51%	6%	41%	

Ixb'alam and Ixmukane scored the highest percents, 80 and 70 percent respectively and they borrowed an average of 1.5 Spanish equivalents. Of these two, Ixmukane borrowed one Kaqchikel equivalent and Ixb'alam committed the only error in the group. Ervin scored 60 percent in equivalent pairs and borrowed from Spanish. María Angélica and Yaxum scored 50 percent and borrowed from both languages, but they borrowed the most from Spanish, i.e., 40 percent of all 10 Kaqchikel lexemes expected. Säqche', Kot and Tojil retrieved the fewest equivalent pairs; they scored below the 50th percentile and borrowed the most Spanish equivalents. Säqche' and Kot provided half and Tojil provided 80 percent of the Kaqchikel lexemes in Spanish borrowings. These results show that 62 percent of the children have not maintained their Kaqchikel equivalent lexemes and that they have clothing semantic fields that are dominated by Spanish.

The results listed on table 2.26 indicate that the bilingual children had more equivalent pairs in common than in the other semantic fields. Seventy percent of the ten equivalent pairs were known by at least 62

percent of the group. The equivalent pair that the children did not retrieve was *kamixa'*-camisa and this is most likely due to the fact that the pair consists of the same L2 lexeme, except that the Kaqchikel equivalent is the assimilated form.

Table 2.26 Seven lexical pairs in the clothing field

Gloss	Kaqchikel	Spanish	No. of children
Mayan skirt	uq	corte	7
Mayan top	po't	blusa	6
zapato	xajab	zapato	6
female belt	ximb'äl	faja	5
Mayan pants	wexaj	pantalón	5
sweater	koton	suéter	5
sombrero	pawiaj	sombrero	5

Uq-corte 'Mayan skirt', *po't-güipil* 'Mayan top' and *xajab-zapato* 'shoes' were equivalent pairs that most children knew (average 75%). This is obviously due to the fact that these items are of high frequency use. Furthermore, Mayan female clothing has not been replaced by western clothing. The other equivalent pairs that refer to pants, sweater, and hat were also well known, even though in the case of pants, the classical Mayan pants have been replaced by western style ones. Finally, of these seven items, shoes and sweater are acculturated items. Nevertheless, the children probably knew the Kaqchikel lexical equivalents due to their high frequency use in the community.

2.2.5.1 Kaqchikel Borrowings

During the Spanish task, Kaqchikel equivalent lexemes were borrowed to name three items, one was *tzatz* 'cap' and the other two, which are still part of the Kaqchikel

Maya culture, were *ximb'äl* 'female Mayan belt' and *su't* 'scarf'. *Su't* was borrowed by 37 percent of the children; *ximb'äl* and *tzatz* were borrowed by 12 percent of the group (see appendix B). Note that the borrowing of *ximb'äl* and *su't* is significant because even though lexical equivalents in Spanish are available, cultural equivalents are not, i.e., these garments are not part of the clothing practices of Ladinos and this is probably why some children had not learned the Spanish equivalents.

2.2.5.2 Spanish Borrowings

The monolingual group borrowed the most Spanish lexical equivalents of all the groups (see appendix D) and the adults borrowed more Spanish equivalents in this semantic field than in previous ones. These results suggest that cultural contact is as important a factor as bilingualism in borrowing phenomena. Moreover, these results also demonstrate the changing clothing practices of the community. The monolinguals borrowed 43 percent, the bilinguals 41 percent and the adults 32 percent of the ten lexical items for this semantic field. All monolingual children borrowed an average of four Spanish lexemes. Three bilinguals borrowed the most Spanish equivalents, i.e., they borrowed an average of six Spanish equivalents. Seventy-five percent of the adults borrowed an average of four Spanish lexemes and the oldest adult borrowed only one Spanish lexeme.

Comparing the type and number of lexemes that were borrowed, it was found that participants in the groups had fewer borrowings in common in this semantic field

than in the previous fields. Table 2.27 shows that changes were taken place in the groups' lexicons. Ninety-four percent of the 18 participants retrieved either Spanish *camisa* 'shirt' or *playera* 'tee shirt' to name a Mayan shirt. The grandmother was the only participant who retrieved the assimilated loanword *kamixa'*. Seventy-five percent of mothers retrieved Spanish *camisa* as well as half of the fourteen children. However, a generational change was taking place since 66 percent of the monolinguals and only 37 percent of the bilinguals retrieved Spanish *playera* 'tee shirt'. Moreover, this was apparently a recent borrowing since it only surfaced in the younger generations.

Table 2.27 Spanish borrowings in the clothing field

Kaqchikel	Spanish Borrowings	Adults	Bilinguals	Monolinguals
kamixa' 'shirt'	camisa playera	3	5 3	2 4
tz'atz 'cap'	gorro/gorra	4	6	6
wexaj 'pants'	pantalón	2	4	6
koton 'sweater'	suéter	3	3	6

Gorro/gorra 'cap' was borrowed by 89 percent of all the groups; note that all monolingual children and adults, including the grandmother, borrowed this Spanish equivalent. *Pantalón* and *suéter* were borrowed by sixty-seven percent of all the groups. *Camisa*, *gorro* and *suéter* clearly had the status of loanwords, shown most clearly by the fact that the majority of the adults borrowed them. Although only half of the adults borrowed Spanish *pantalón*, the monolingual children had clearly incorporated it in their lexicons, since all of them produced it. Thus, the data suggests that these four borrowings are considered loanwords.

An interesting finding was that the bilingual girls reflected the clothing patterns of the community in their language choice. During the Kaqchikel task, they named the Mayan female garments with Kaqchikel equivalent lexemes. However, they retrieved Spanish equivalents rather than Kaqchikel ones when naming male garments; thirty-three percent named the garment *pants* with Spanish *pantalón* 'pants' and 100 percent named the garment *shirt* with Spanish *camisa* 'shirt' or *playera* 'tee-shirt'. By comparison, 40 percent of the boys named the female Mayan top *po't* and belt ximb'äl with Spanish *güipil* and *faja*; and 20 percent also named the Mayan skirt *uq* with Spanish *corte*. The boys also borrowed from Spanish to name Mayan male garments; 60 percent borrowed Spanish *pantalón* 'pants' and 100 percent borrowed *camisa* 'shirt' or *playera* 'tee-shirt'. Girls and boys borrowed Spanish equivalents to name male Mayan clothing; *kamixa'* was completely replaced by both groups. By comparison, the monolingual children of both genders, as well as the adults paralleled the responses of the bilingual girls (see appendices C, D and E). Hence, these results indicate that the bilingual girls were maintaining Kaqchikel lexical items that pertain to female Mayan clothing, while the boys were making changes that did not correlate with the community's clothing practices.

2.2.5.3 Inappropriate Answers

Ixb'alam provided the only inappropriate answers in this semantic field. She named the object *hat* with the Spanish co-hyponym *gorra* 'cap' during both language tasks (see appendix A).

2.2.6 Body Parts Semantic Field

Romaine (1995) classified the body parts semantic field as belonging to the core vocabulary and was considered a personal domain; thus, bilingual children were not expected to borrow lexemes from Spanish. Table 2.28 lists the 12 lexical items that were selected for this semantic field.

Table 2.28 Body Parts Semantic Field

Kaqchikel	Spanish	Gloss
rupam	su estómago	his stomach
rutele	su hombro	his shoulder
rey	sus dientes	his teeth
ruchi'	su boca	his mouth
rujolom	su cabeza	her head
rupaläj	su cara	his face
rutzam	su nariz	his nose
raqän	sus piernas	her legs
ruq'a	sus brazos	her arms
ruwäch	sus ojos	his eyes
ruwi'	su cabello	her hair
ruixk'äq	sus uñas	her/his nails

The methods used to elicit these lexical items required that derived genitive forms be used, which in the case of Kaqchikel, trigger morphological changes in the root morphemes. In most cases, the suffix *-aj* is deleted when a possessive bound morpheme is attached to the root, e.g., *pamaj* 'stomach' > *apam* 'your stomach'. However, an exception is *paläj* 'face' and in other instances such as *ixk'äq* 'nails' the suffix *-aj* does not occur.

The results on table 2.29 show that the average for the bilingual group was 90 percent, the highest yet of all the semantic fields, which coincided with its classification as a core semantic field.

Table 2.29 The group's results in the body parts field

Body Parts	% Equivalent Pairs	% Kaqchikel Borrowings	% Spanish Borrowings	% Errors
Säqche'$_8$	100	-	-	-
María Angélica$_8$	92	-	8	-
Ixb'alam$_{10}$	92	-	8	-
Ervin$_9$	92	8		
Ixmukane$_{11}$	92	-		8
Tojil$_9$	83	-	8	8
Kot$_8$	83	-	17	-
Yaxum$_8$	75	-	25	-
Average percentages	89%	-	8%	2%

Despite the fact that this semantic field belongs to the core lexicon, Kaqchikel and Spanish borrowings occurred, as well as errors; although, their percentages were also the lowest. The entire group knew seventy-five percent of the lexemes in this field. The Spanish borrowing percentage was the lowest and only one child borrowed a Kaqchikel equivalent lexeme. Ervin borrowed the Kaqchikel lexeme *atelem* 'your shoulder', during the Spanish task (see appendix C). Three equivalent pairs were not well known by the children: *rey-dientes* was known by 87 percent of the group; *ruixkäq-uñas* was known by 62 percent; and *atelem-hombro* 'your shoulder' was known by 50 percent of the group.

2.2.6.1 Spanish borrowings

The bilingual group named seven percent of the twelve items with Spanish lexemes during the Kaqchikel task. Sixty-two percent of the group borrowed at least one of the following Spanish equivalent lexemes: *hombro* 'shoulder', *dientes* 'teeth' and *uñas* 'fingernails'. Spanish *hombro* 'shoulder' was borrowed by 50 percent,

uñas was borrowed by 37 percent and *diente* was borrowed by 12 percent of the children. The monolingual children did not borrow Spanish equivalent lexemes, nor did the adult group.

2.2.6.2 Inappropriate answers

In this field, there were few inappropriate answers and these reflected lexical gaps, as well as a meronymic organization of the bilingual lexicon. For instance, 25 percent of the bilingual group retrieved *ruchi'* ('his/her mouth') instead of *rey* 'his/her teeth' to name the *teeth* (see appendix B). The retrieval of *ruchi'* shows that these lexical items are linked in the children's lexicons, specially, since they have a have a meronymous relation. Despite the semantic relation between Kaqchikel *ruchi'* and *rey*, the response *ruchi'* to name the *teeth* was still considered an inappropriate answer.

2.2.7 The Semantic Field for People and Family Terms

This semantic field was considered to belong to the core lexicon; thus, borrowing was not expected to occur. This field cannot be explored easily because the Kaqchikel language has gender-specific vocabulary for the family; for instance, there are specific terms for 'son of a woman', 'son of a man', 'daughter of woman', 'daughter of a man', etc. Several lexical items could be used by both sexes and table 2.30 lists the seven lexical items that were included in this semantic field.

Table 2.30 People and family terms semantic field

Kaqchikel	Spanish	Gloss
achin	hombre	man
akwal	niño	boy
ixoq	mujer	woman
ixtän	niña	girl
ne'y	bebé	baby
tataj	papá	father
te'ej	mamá	mother

In this field, half the children retrieved 100 percent of the equivalent pairs. The other half retrieved 83 percent of the equivalent pairs. Twenty-five percent of the group borrowed provided Kaqchikel and Spanish borrowings in small percentages and none of the children provided inappropriate answers.

Table 2.31 The group's results in the people's terms field

People's terms	% Equivalents Pairs	% Kaqchikel Borrowings	% Spanish Borrowings
Kot$_8$	100	-	-
Säqche'$_8$	100	-	-
Ixmukane$_{11}$	100	-	-
Ervin$_9$	100	-	-
Yaxum$_8$	86	14	-
María Angélica$_8$	86	-	14
Ixb'alam$_{10}$	86	-	14
Tojil$_9$	86	14	
Average Percentages	93%	1%	1%

The average percentage of equivalent pairs in this field was 93 percent, which was the highest of all the semantic fields. All of the eight children retrieved five equivalent pairs, i.e., 71 percent of the seven items in the field. Surprisingly, the group did not retrieve just two equivalent pairs, 29 percent of the field. Moreover,

the equivalent pairs *te'ej-mamá* and *ne'y-bebé* 'baby' were retrieved by 75 percent of the group. These results indicate that, unlike in the previous semantic fields, in this semantic field more children knew more of the same equivalent pairs. Borrowing in Spanish was at the lowest 1 percent. Regarding Kaqchikel borrowings, 25 percent of the children borrowed the Kaqchikel equivalent *ne'y* 'baby' during the Spanish test (see appendix B).

2.2.7.1 Spanish Borrowings

The results of the Kaqchikel task were significant because the bilingual children borrowed the Spanish lexeme *mamá* 'mom' to name a core lexical item during the Kaqchikel task. Various participants in the monolingual children's and adult's groups also borrowed the same Spanish equivalent. More monolingual children borrowed Spanish *mamá* 'mom' than the other two groups. Fifty percent of the monolingual group, and twenty-five percent of the bilingual children and adults borrowed this Spanish equivalent lexeme. The results for the monolingual children and adults were unexpected, which indicate that the influence of the Spanish language in the family domain is indisputable. Clearly, the mothers were displacing the Kaqchikel equivalent, but this is not so clear with the monolingual children. Either these children were displacing the Kaqchikel equivalent or they had not yet acquired it.

2.3 Cycles of Lexical and Phonological Change

In this section, I analyze and describe the borrowings and loanwords that the bilingual children, the

monolingual children and adults produced, as well as the various degrees to which these borrowings were assimilated to the Kaqchikel sound system. The data that these groups provided were sufficiently robust and systematic to propose that those Spanish lexemes borrowed by Kaqchikel speakers, particularly in Tecpán, pass through several stages of phonological assimilation which can be variously realized by different generations at different points in time. In other words, borrowings have a phonological cycle of their own, and monolinguals and bilinguals, who could be either children or adults, can manifest the various assimilated forms within a borrowing's cycle. Based on the data, I propose that a borrowing or a loanword has the following four stages of assimilation:

Stage 1 is the initial stage of phonological change in which native terms for native (e.g., ïs 'potato') and acculturated (e.g., xnakät 'onion') objects become targets of loanword replacement. In addition, nonassimilated loanwords (e.g. sandía) become target of assimilation.

Stage 2 is the replacement stage in which the borrowing or loanword is phonologically assimilated obeying the constraints of the Kaqchikel phonological system.

Stage 3 is the stage in which partial assimilation occurs, i.e., features of the Kaqchikel phonological system are retained at the same time as features of the Spanish phonological system are also produced.

Stage 4 consists of lexical and phonological borrowing, i.e., the loanword does not obey any

phonological constraints of Kaqchikel. In this stage not only the assimilated loanword is lost, but also the L1 lexeme may be completely replaced by the L2 lexeme in a speaker's lexicon and, or in the community.

The realization of phonological assimilation at any of these stages may result in either an assimilated or nonassimilated loanword, both of which represent cycles of lexico-phonological change that take place through time within a speech community and which also have various intergenerational and individual phonological realizations. This proposal is substantiated by similar findings made by Brown (1999:101), who clearly demonstrated with languages like Klamath and Tzotzil that items of acculturation in earlier time states are replaced in later time states. For instance, Brown found that in the Mayan language Tzotzil lexemes that named certain acculturated objects have the following realizations in two different time states (adapted from Brown 1999:101):

(1)

Gloss	Late Sixteenth Century	Modern
cheese	queso	keʃu
needle	aguja	'akuʃa
key	jamob na	yave
shovel	pech'pech'te'	pala

In Tzotzil, Spanish *queso* and *aguja*, are phonologically assimilated in modern times; however, they were not in the sixteenth century. In *queso,* the Spanish voiceless alveolar fricative was modified to the Tzotzil voiceless postalveolar fricative and the back mid-round vowel was raised. The Tzotzil glottal stop was inserted word initially in Spanish *aguja*, the Spanish voiced velar stop

was replaced by the voiceless velar stop and the Tzotzil voiceless postalveolar fricative replaced the voiceless velar fricative. The last two examples show the opposite process, i.e., the native terms used to name the acculturated objects *key* and *shovel* were replaced by Spanish loanwords without any phonological assimilation. Based on Brown's data and the data that I collected, I propose that loans and speech borrowings pass through stages of phonological adaptation, which can be manifested by different generations in the community at different time states. A loan can be assimilated into the phonological system of the borrowing language, or it may skip assimilation in one time state and go through phonological assimilation at a different time state.

The data and proposal that I present here do not support Stenson's (1998) analysis that there is no regularity in the assimilatory processes of Spanish loanwords. Stenson (1998) noted that there are phonological strategies that Kaqchikel speakers of the Lake Atitlán region apply to Spanish loans. One of the commonest strategies is to drop post-stress vowels, often with concomitant lengthening for the stressed vowel and with stress shift to follow the Kaqchikel final stress pattern, i.e., final syllables are lost with final stress shift; for instance (adapted from Stenson 1998:227):

(2) [gring] 'gringo'
[libreri:] (librería) 'library'
[pe:n] (pena) 'trouble, worry'

Stenson (1998:229) indicated that Spanish loans are produced variantly; for instance, [pena]-[pe:n] 'trouble, worry' and [mexiko]-[mexk^{h}] and that, therefore, there is

no "absolute regularity" in these phonological processes. However, my proposal suggests that there is regularity in these phonological processes if they are analyzed in terms of the stages proposed here as well as if they are analyzed within the constraints posed by the Kaqchikel phonological system.

The data of this study are evidence that loans and their various phonologically assimilated forms represent regular phonological processes that obey the constraints of the phonological system of the borrower or the lender language. That is, loanwords have a life cycle of assimilation that may start with complete Kaqchikel phonological assimilation to direct borrowing of Spanish pronunciation. Furthermore, I propose that, given the responses of the bilingual children and monolingual ones, Spanish loanwords are organized in some of the children's lexicons as equivalents of their non-assimilated Spanish counterparts. In other words, in the children's lexicons assimilated loanwords belong to Kaqchikel and the Spanish lexemes from which the assimilated forms were created belong to Spanish.

The bilingual children, the monolingual children and the adults produced the data on loanword assimilation presented here. Also, the groups mostly produced assimilated loanwords from the *artifacts*, *food*, *living things* and *clothes* semantic fields. These loanword data are discussed in terms of the four stages that I propose and table 2.32 lists the assimilated loanwords that were retrieved by the three groups during the Kaqchikel task. The first column lists the Spanish borrowings in their orthographic form and the other columns are arranged from

the youngest to the oldest group. The numbers in parentheses indicate how many speakers produced that specific assimilated form. For instance, *ventana* 'window' was produced in the assimilated form [bentan] by a monolingual and a bilingual child, but the adults did not produce an assimilated form. The gaps in these columns indicate that none in that particular group produced an assimilated loanword. The exception is Spanish *posillo* 'clay cup' whose Kaqchikel equivalent *xara* 'cup' was produced by all four adults (see appendices B, D and E).

Table 2.32 Assimilated loanwords in the artifacts field

Spanish borrowings	Monolinguals	Bilinguals	Adults
ventana 'window'	[bentan](1)	[bentan](1)	-
cuchillo 'knife'	[kutʃiç] (2) [kutʃi:] (1)	[kutʃiç](2)	[kutʃi:](1)
cuchara 'spoon'	[kuçal] (1)	[kuçar] (1)	-
botella 'bottle'	[bote:ç](2)	[bote:ç](1)	-
paraguas 'umbrella'	[palaw] (1) [paraw] (2)	[paraw] (1)	-
pelota 'ball'	[peloth](1)	-	[peloth](2)
olla 'pot'	[oi:] (1) [oç] (2)	[oi:] (1)	[oi:] (1)
posillo 'clay cup'	[posiç] (1)	-	-

The monolingual children modified phonologically more loanwords than the other two groups; they assimilated 40 percent of the 20 items in this semantic field, while the bilingual children assimilated 30 percent of the items and the adults 15 percent. Moreover, the monolingual children produced more than one possible assimilated form, e.g. the Spanish loanwords *cuchillo* 'knife', *paraguas* 'umbrella' and *olla* 'pot'.

Note that the form [palaw] also represents a developmental stage, since the monolingual child had not yet acquired the voiced alveolar tap and produced the voiced alveolar lateral phoneme instead. Thus, these data show that the monolingual children were assimilating phonologically more loanwords than the bilingual children and adults. Hence, these data do not support Stenson's 1998 proposal. In fact, the adults and the bilinguals tended to produce more non-assimilated loanwords than the monolingual children.

I suggest that the groups present different stages of loanword assimilation and that the eight lexical items on table 2.33 are representative of the four stages that I propose (see appendices B, D and E).

Table 2.33 Stages of assimilation for the artifacts field

Stage 1	Stage 2	Stage 3	Stage 4
b'ojo'y$_{12}$ 'pot'	[oi:]$_3$	[oç]$_2$	[oça]$_3$
kolaj$_2$ 'ball'	[pelot^h]$_3$	-	[pelota]$_{10}$
leme't 'bottle'	-	[boteç]$_3$	[boteça]$_{13}$
pak'a'ch$_4$ 'spoon'	[kutʃar]$_1$	-	[kutʃara]$_{12}$
parab'äl$_1$ 'umbrella'	[paraw]$_2$	[paragua]$_3$	-
qupibäl$_2$ 'knife'	[kutʃi:]$_2$	[kutʃiç]$_4$	[kutʃiço]$_{10}$
ruwäch jay$_1$ 'window'	[bentan]$_2$		[bentana]$_{11}$
xara$_{16}$ 'clay cup'	-	[posiç]$_1$	-

The numbers in subscript indicate how many speakers produced that specific assimilated form. The lexemes listed under the heading of Stage 1 became targets of lexical replacement by speakers of the three groups. These lexemes name both native and acculturated objects; however, the only native objects are *b'ojo'y* 'pot' and

qupib'äl 'knife'. The Kaqchikel lexeme *xara* 'cup' is an assimilated loanword from Spanish *jarra* and apparently is being replaced by Spanish *posillo* 'clay cup'.

In stage 2, loanwords are assimilated and obey the phonological constraints of Kaqchikel. For instance, the data in table 2.33 show that by deleting the final nonstressed vowel the final syllable stress pattern of Kaqchikel was maintained; Stenson (1998) made this observation. In other examples the final vowel was lengthened and final codas were ended with Kaqchikel phonemes or allophones: long vowels, the alveolar nasal and the velar glide are Kaqchikel phonemes. The allophones are the devoiced final alveolar tap and the alveolar aspirated stop at the end of the syllable.

Stage 3 is the transition stage; loanwords present aspects of the Kaqchikel and the Spanish phonological systems. For instance, final nonstressed vowel deletion maintains the final stress pattern of Kaqchikel, while at the same time the Spanish voiceless palatal fricative ended final codas. Stage 4 represents the final stage; direct borrowing of Spanish pronunciation takes place; loanwords listed under this heading do not obey the constraints of the Kaqchikel phonological system. I suggest that this stage can lead to complete lexical replacement of the L1 lexeme by the L2 equivalent lexeme. The data of this study provides some evidence, for instance, Kaqchikel *lemet, parab'äl, pa'ka'ch, ruwäch jay* and *kolaj* have been replaced with Spanish loanwords by all the members of the three groups, except for the oldest, the grandmother.

Interestingly, some bilinguals retrieved the Spanish assimilated loan during the Kaqchikel task, while they retrieved the Spanish nonassimilated lexeme during the Spanish task. For instance, Ervin and María Angélica retrieved [kutʃiç] 'knife' during the Kaqchikel task and [kutʃiço] 'knife' during the Spanish task (see appendix A). Thus, these children considered [kutʃiç] to be a Kaqchikel lexeme and [kutʃiço] its Spanish equivalent lexeme. In (3), the lexical organization of this pair is represented: [kutʃiç] is marked with the *k* (Kaqchikel) and [kutʃiço] with the *s* (Spanish) subscript.

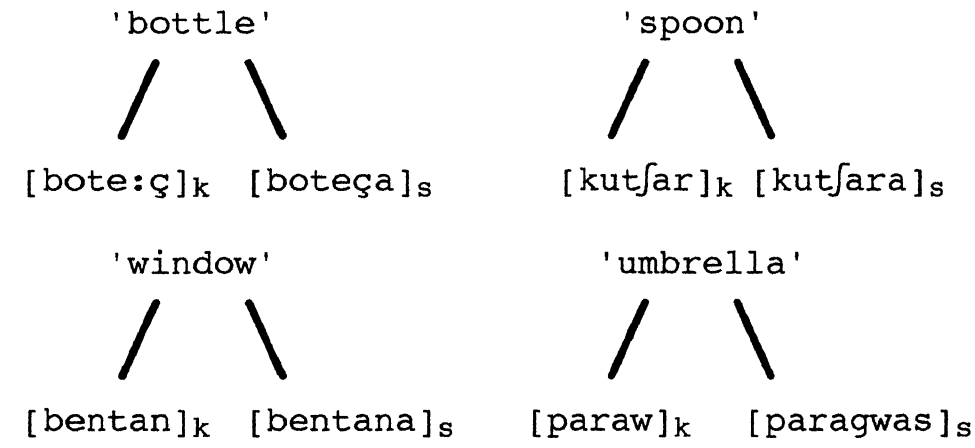
(3) Ervin & María Angélica

$[kutʃiç]_k$ $[kutʃiço]_s$

Clearly, Ervin and María Angélica were treating [kutʃiç] and [kutʃiço] as an equivalent pair, although this equivalet pair was basically integrated by Spanish lexemes.

Ervin provided more evidence for this kind of lexical organization. In (4), he produced four more assimilated loanwords during the Kaqchikel task, while he produced the Spanish non-assimilated lexemes during the Spanish task:

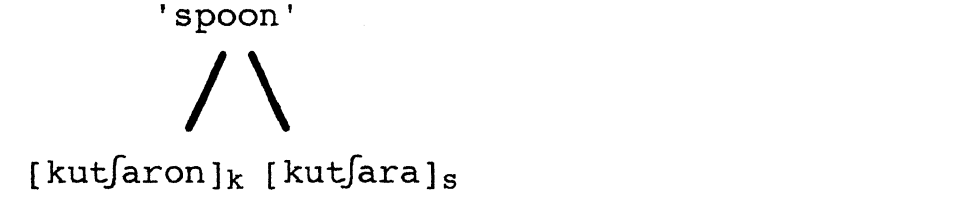
(4)



Interestingly, Ervin again assigned to the Kaqchikel lexicon Spanish lexemes that were phonologically assimilated to the phonology of Kaqchikel, while he assigned their nonassimilated counterparts, logically, to the Spanish lexicon. The lexical assignment of Spanish lexemes to the lexicons of Kaqchikel and Spanish was evidently quite systematic; nevertheless, it is not clear how permanent is this type of organization in the lexicon of a bilingual such as Ervin. I suggest that sociolinguistic factors such as the dominant-subordinate relations between the speakers of the languages, the educational system and the job market influence the status of these types of lexical pairs in an individual or in the community.

Also, some children considered morphologically derived lexemes of Spanish to belong to Kaqchikel. For example, Säqche' made a language distinction between two morphologically related items: *cucharon* 'big spoon' and *cuchara* 'spoon'.

(5)



Cucharon was retrieved during the Kaqchikel task; thus it was marked as a Kaqchikel lexeme, while *cuchara* was marked as its Spanish equivalent lexeme. Clearly, this type of lexical organization was not widespread since only two children, a monolingual and a bilingual, produced it. However, the data presented in (3-5) demonstrate the lexical equivalent pairs do not necessarily consist of lexical items from each language.

Regarding the semantic food field, participants of the three groups produced several phonological assimilations (see appendices B, D and E). These phonological assimilations are presented on table 2.34 and they are organized in the same manner as in table 2.32. Interestingly, fewer assimilated loanwords occurred in this semantic field than in the artifacts semantic field. This is perhaps due to the possibility that speakers may integrate Spanish loanwords in their lexicons without assimilating them to the Kaqchikel phonological system. I suggest that sociolinguistic and system internal factors determine if a loanword is phonologically assimilated.

Table 2.34 Assimilated loanwords in the food field

Spanish loanwords	Monolinguals	Bilinguals	Adults
naranja 'orange'	[naranx] (2)	[naranʃ] (1) [naranx] (1)	[naranʃ] (1) [naranx] (1)
sandía 'watermelon'	[sandi:] (1)	[sandi:] (1)	[sandi:] (1)
cebolla 'onion'	[seboç] (1)	[seboç] (1)	[seboç] (1)
papas 'potatoes'	[paps] (1)	[paps] (1)	-
manzana 'apple'	[mansan] (1)	-	-
hongo 'mushroom'	[ongoʃ] (1)	-	-

The monolingual children's group assimilated 35 percent of all lexical items in this semantic field, the bilingual group 24 percent and the adult group 18 percent. The bilingual children and the adults produced the same two possible assimilated forms for the Spanish loanword *naranja* 'orange'. Although the monolingual children modified phonologically more loanwords than the other two groups, it also modified fewer loanwords in this semantic field than in the artifacts semantic field. The data on table 2.35 is representative of the four stages of assimilation that I propose and the numbers in subscript indicate how many speakers used the form:

Table 2.35 Assimilated loanwords in the food field

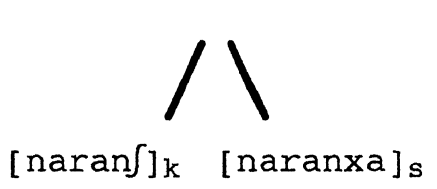
Stage 1	Stage 2	Stage 3	Stage 4
xna'j 'orange'	[naranʃ]$_2$	[naranx]$_4$	[naranxa]$_{12}$
sandía 'watermelon'	[sandi:]$_2$	-	[sandia]$_{15}$
xnakät$_1$ 'onion'	-	[seboç]$_1$	[seboça]$_{16}$
ïs$_1$ 'potato'	-	[paps]$_1$	[papas]$_{16}$
nimamixku'$_1$ 'apple'	-	[mansan]$_1$	[mansana]$_{15}$
okox$_8$ 'mushroom'	-	[ongoʃ]$_1$	[ongo]$_4$

Stage 1 was the initial stage of phonological change; native terms for native (e.g., *ïs*) and acculturated (e.g., *naranja*) objects became targets for replacement, as well as non-assimilated loanwords (e.g. *sandía*). In stage 2, assimilation of Spanish *naranja* and *sandía* occurred. The forms representing stage 3 show phonological aspects of both languages; for instance, final non-stressed vowels are deleted and Spanish phonemes are permitted in the structure. Stage 4 consisted of direct phonological and lexical borrowing.

In this stage not only the assimilated loanword may be lost, but also the L1 lexeme may be completely replaced by the L2 lexeme in a speaker's lexicon and, or in the community; for instance *xna'j*, *xnakät*, *îs* and *nimamixku'*.

In this semantic field, one bilingual also treated a phonologically assimilated loanword as belonging to the Kaqchikel lexicon. Yaxum retrieved the phonologically assimilated *naranx* 'orange' during the Kaqchikel task and *naranja* 'orange' during the Spanish task (see appendix A).

(6)



Although the pair *naranx-naranja* is integrated by two phonological realizations of the same Spanish lexeme, for Yaxum this equivalent pair is an appropriate equivalent pair, for the object *orange* since each form obeys the phonological constraints of each language. Moreover, in this semantic field morphologically derived forms were also treated as belonging to both languages, i.e., singular and plural variants of Spanish lexemes were also considered as belonging to either Kaqchikel or Spanish.

Singular forms were marked as belonging to the Kaqchikel component of the lexicon and the plural forms were marked as belonging to the Spanish lexical component. The approach of some of the children at assigning Spanish lexemes to Kaqchikel or Spanish obeyed the requirements of the languages. In other words, since Spanish pluralizes the [+N] category and Kaqchikel does, but only for humans and certain animals, María Angélica

and Kot simply pluralized the Spanish lexeme in Spanish, but not in Kaqchikel; for instance:

(7)

Singular	Plural	Gloss
papa	papas	potato(es)
tomate	tomatoes	tomato(es)
banano	bananos	banana(s)
cebolla	cebollas	onion(s)

All the examples in (7) were produced by both children, except for the pair *cebolla-cebollas* 'onion(s)' which was retrieved by Kot. The interesting aspect of this lexico-morphological distinction is that it follows the singular-plural distinction of these languages:

(8)

Hence, the children assigning the singular forms to Kaqchikel and the plural forms to Spanish solves their problem of not knowing a Kaqchikel equivalent for the objects in question. Since only two children produced this type of division, it is not clear that this is a permanent division of lexemes in these children's lexicons. It could have been a temporary strategy to name the objects presented to them during the Kaqchikel task. Nevertheless, these children showed a temporary assignment of Spanish lexemes as belonging to either Kaqchikel or Spanish, as well as an interesting approach to extending their lexicons to meet their pragmatic needs, i.e., the necessity to name objects in both languages.

One instance of loanword assimilation occurred in the semantic field of living things; four monolingual children and an adult produced phonologically adapted forms of the loanword for *mosquito* (see appendices D and E), which are presented and organized according four stages of assimilation on table 2.36. The numbers in subscript indicate how many speakers used that form.

Table 2.36 Assimilation of the loanword for mosquito

Stage 1	Stage 2	Stage 3	Stage 4
xanän$_1$	[sanku:]$_2$	[sankud]$_2$	[sankudo]$_{11}$
			[ʃankudo]$_1$

Phonological changes proceeded as proposed previously. *Xanän* 'mosquito' became target of replacement in stage 1. Borrowing occurred along with phonological assimilation in stage 2. The final nonstressed vowel was deleted and the stressed vowel was lengthened. In the transitional stage, or stage 3, the final stress pattern of Kaqchikel and the Spanish voiced dental stop in this syllable's coda were permitted. The alternative form shows that deletion of the unstressed final vowel was not maintained. To compensate for this, the Spanish voiceless alveolar fricative was replaced by the Kaqchikel voiceless postalveolar fricative. The essential aspect of this transitional stage was that phonological aspects of both languages came into play, such that the loanword was not assimilated completely, but it was not completely foreign either.

Stage 4 consisted of direct phonological borrowing, i.e., the borrowed lexeme did not obey any phonological constraints of Kaqchikel and foreign elements to the

Kaqchikel system were permitted. This stage could lead to complete lexical replacement of the L1 lexeme by the L2 lexeme, as was the case with *sancudo*, which children from both groups borrowed, as well as 75 percent of the adults, only the grandmother produced Kaqchikel *xanän*.

The four instances of phonological assimilation that occurred in the clothing semantic field are organized in table 2.37 in the same manner as in the previous tables listing loanword assimilations.

Table 2.37 Assimilated loanwords in the clothing field

Spanish borrowings	Monolinguals	Bilinguals	Adults
camisa 'shirt'	-	-	[kamiʃa'] (1)
playera 'tee-shirt'	[plajer] (3)	[plajer] (1) [plajera](2)	-
zapato 'shoe'	[ʃapato] (1)	-	-
gorra 'cap'	[gor] (1)	[gor] (1)	[gor] (2)

The variations of the Spanish loanwords *camisa, playera, gorra, xajab and zapato* manifested an initial stage, the assimilation stage, the transition stage and a non-assimilation stage. I suggest that the data on the table below represent these stages:

Table 2.38 Stages of assimilation for the clothing field

Stage 1	Stage 2	Stage 3	Stage 4
kamixa'$_1$ 'shirt'	-	-	[kamisa]$_{10}$
camisa 'shirt'	[player]$_4$	-	[playera]$_2$
tzatz$_2$ 'cap'	-	[gor]$_4$	[gorra]$_{11}$
xajab$_{16}$'shoe'	-	[ʃapato]$_1$	[sapato]$_2$

The data above can be analyzed in terms of the four stages. Stage 1 is the initial stage of phonological change; the Kaqchikel lexemes *tzatz* and *xajab* become targets for replacement, as well as the assimilated

loanword *kamixa'* and the non-assimilated loanword *camisa*. In stage 2, phonological assimilation of the loanword took place; [player] and [gor] represent this stage. The phonological processes of nonstressed vowel deletion and devoicing of the trill obey the phonological constraints of Kaqchikel.

The loanword [ʃapato] represents this stage 3, which starts making the transition from phonological assimilation of L1 to phonological borrowing of L2; the Spanish loanword is not fully nativized but it is not fully foreign either. In other words, the final nonstressed vowel was allowed and the voiceless alveopalatal fricative replaced the voiceless alveolar fricative. Stage 4 does not obey any phonological constraints of Kaqchikel, i.e., foreign elements to the Kaqchikel system are permitted, including phonemic and prosodic elements.

The data of this section demonstrate that borrowing is not a static process and that a loanword can be replaced by another loanword. For instance, following a cycle of borrowing and replacement to name objects, the data on the lexeme for the clothing item *shirt* demonstrated that assimilated loanwords can be replaced by their non-assimilated counterparts and these can be replaced by other loanwords.

The earliest known label for the object *shirt* in Kaqchikel is *kamixa'* (see section 2.2.5), an assimilated loanword with (1) the glottal stop occupying the final coda; (2) the Kaqchikel alveopalatal voiceless fricative replacing the Spanish voiceless alveolar fricative; and (3) stress on the final syllable. *Kamixa'* has been lost

in the young adult and children's generations; only the oldest generation, represented by the grandmother, had retained it. The next stage on the cycle for *kamixa'* was the adoption the phonology of Spanish. The young adults and half of all the children borrowed the lexeme *camisa* along with its Spanish phonology. Furthermore, *camisa* was being replaced by *playera*, which, as I have shown above, was produced in its assimilated and non-assimilated forms by monolingual and bilingual children. In other words, half of the children borrowed a variation of *playera*. The lexico-phonological changes of Spanish *camisa* are shown below.

(9)

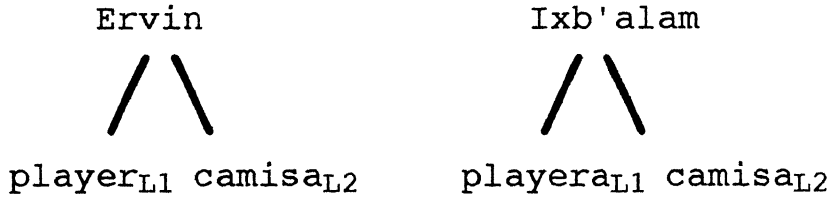
Grandmother Mothers & Children Children

kamixa'----------> camisa ----------> playera

Thus, the grandmother was the only speaker who maintained the assimilated loanword. The mothers and some children have adopted the nonassimilated form, while other children, particularly the younger ones, have replaced *camisa* for *playera*.

Ervin and Ixb'alam marked the distinction between *camisa* and *playera* in their lexicons, i.e., variations of the Spanish lexeme *player/playera* were assigned to the Kaqchikel component of the lexicon and the Spanish lexeme *camisa* was assigned to Spanish component of the lexicon.

(10)



These data pointed out that not all adult speakers tended to maintain phonologically adapted loanwords more

consistently than younger speakers and that children were more willing to replace old loanwords with new ones. Interestingly, of the bilingual and monolingual children, the monolinguals produced more assimilated loanwords than the bilinguals.

These results seem to contradict Stenson's (1998:201) observation that 'older speakers assimilate loanwords to the Kaqchikel phonological system much more consistently'. This contradiction can be explained if one assumes that with regard to adults, these borrowings had already passed through the assimilation stage and had arrived at the final stage of phonological assimilation, which is zero adaptation. Another explanation for these variable results may be that the monolingual children were still developing their Kaqchikel and were more prone to obey the Kaqchikel phonological system.

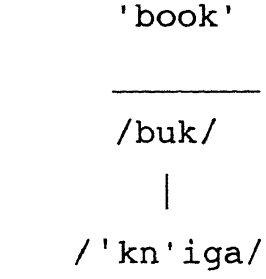
I have provided sufficient data to support my proposal that the groups present different stages of phonological loanword adaptation and that assimilated loanwords may pass through stages of phonological assimilation, which can be manifested by different generations at different time states. In addition, these stages may result in either nativized or nonnativized loanwords, both representing cycles of lexical change that take place through time and generations. Finally, these data synchronically supports Brown's (1999) conclusion that native terms for introduced entities in earlier time states of indigenous languages have tended to be replaced by European loans in later time states in these languages.

2.4 Lexical Subordination of the First Language

An important finding of this investigation is that the data points to a structure of equivalent lexical pairs that I call *L1 subordination* in the spirit of Weinreich's (1953) subordinative model and suggest that this type of structure is another subordinative type of structure that results from the acquisition of a second language or of its vocabulary. My claim is that in L1 subordination L1 lexemes are reorganized such that they have become subordinated to the L2 equivalent lexemes. I suggest that the factors involved in L1 subordination include: language dominance of the L2, low frequency use of L1 and loss of communicative or cultural value of specific items of L1. In this type of reorganization or subordination, the speakers may only access L1 lexical equivalents via their equivalent L2 lexemes. I also suggest that *L1 subordination* is one of the processes that may lead to the replacement of L1 lexemes by L2 lexemes.

Recall that Weinreich (1953) proposed that the subordinative organization was due mostly to the fact that Language B is learned after Language A; a new language is learned with the help of another. In Weinreich's example below, the Russian lexeme *'kn'iga* is retrieved via the lexeme *book* (adapted from Weinreich 1953):

(11)



While he also mentioned that this type of organization need not remain the same through time, he did not say that the opposite could occur. However, the data analyzed herein suggest that the opposite type of organization does occur in the case of child and adult second language learners. In other words, L1 lexemes may be subordinated to L2 lexical items. It was found that in the case of the Kaqchikel Maya children and adults specific L2 lexical items aided in the accessing of information in L1.

I propose that what I call *L1 subordination* occurs especially in conditions of permanent and long-term language contact between two or more languages. Guatemala has had conditions of permanent and long-term language contact for four centuries, which continues to this day. The Mayas speak the subordinate languages and the Ladinos, the dominant group, speak Spanish, which is the prestigious language of this nation. I suggest that *L1 subordination* should not necessarily be tied to bilingualism, since some of the monolingual participants showed to have subordinated L1 lexemes to L2 equivalents. Furthermore, I suggest that the retrieval of a subordinated L1 lexeme proceeds as follows: (1) the visual recognition of the referent is linked to the conceptual structure; (2) the speaker produces an utterance from L2 after reaching the lexical and phonological interface; (3) the L2 lexeme activates the subordinated lexeme of L1; and (4) allows the speaker to access it and to utter it. The essential aspect of these processes is that the L1 lexeme can be retrieved only after the L2 lexeme has been retrieved.

The evidence that I present here to support my proposal includes data from the bilingual and monolingual children and adults, which was provided during the Kaqchikel task. These data only occurred in the artifacts, food, living things, nature and clothing semantic fields (see appendices B, D and E). That is, it occurred in five of the seven semantic fields of this study. I discuss the data by semantic field and by chronological age when possible.

Two mothers, Dolores and Josefa, and two monolingual children, Ixyamanik and Mercedes, showed to have subordinated the equivalent pair *ch'at-cama*. They retrieved the Spanish equivalent lexeme first and this activated the L1 equivalent lexeme, making it possible to access Kaqchikel *ch'at*.

(12)

	'bed'
Language 2	cama
	|
Language 1	ch'at

The example in (12) shows that Spanish *cama* 'bed' from L2 was accessed first and immediately after Kaqchikel *ch'at* 'bed' was accessed. Notice that there was no phonological assimilation of the L2 equivalent to the phonology of L1. Data from bilingual María Angélica and Ervin also showed *L1 subordination*. They had subordinated Kaqchikel *b'ojo'y* to its Spanish equivalent *olla* 'pot'. The L2 equivalent was retrieved first and this activated the L1 equivalent lexeme, which made it possible for *b'ojo'y* to be accessed and uttered by the children.

(13)	María Angélica	Ervin
	'pot'	'pot'
Language 2	olla	oi:
	|	|
Language 1	b'ojo'y	b'ojo'y

Note that Ervin assimilated the L2 equivalent to the phonology of L1, but not María Angélica. Ervin substituted the last syllable of *olla* 'pot' with a long vowel.

The monolingual children also presented cases of *L1 subordination*. Mercedes and Marvin accessed L1 lexemes through their L2 equivalents. First, monolingual Mercedes accessed two L1 lexemes *-jay* and *b'ey-* through their L2 equivalents:

(14)	Mercedes		Marvin
	'house'	'road'	'clay cup'
Language 2	casa	camino	posi:
	|	|	|
Language 1	jay	b'ey	xara

Marvin, a monolingual, also accessed a Kaqchikel lexeme via the Spanish equivalent lexeme. The reorganization of L1 lexemes (*L1 subordination*) was clearly occurring in the lexicons of the monolingual and the bilingual groups. I suggest that *L1 subordination* can ultimately lead to language shift affecting the lexicons of the younger monolingual generations, who will only acquire the L2 lexical equivalents of certain objects. For instance, Kaqchikel *ch'at* 'bed' was accessed by two adults via the L2 equivalent lexeme, while 33 percent of the monolingual children did not access *ch'at* via the L2 lexeme, nor produced it. Instead, they borrowed the Spanish

equivalent *cama* (see table 2.6). Furthermore, *b'ojo'y* was borrowed by 33 percent of the monolingual children, but was accessed by adults and bilingual children through the L2 lexical equivalent *olla*.

Regarding the food semantic field, there is further evidence for the subordinated organization of some equivalent lexical pairs in the groups' lexicons. Dolores, María Reymunda and Josefa retrieved the same target lexemes of L1 via the lexeme of L2.

(15)

	Dolores, Josefa and Ma. Reymunda	Dolores and Josefa
	'tomato'	'banana'
Language 2	tomate	platano
	|	|
Language 1	ixkoya'	saq'ul

The fact that the young mothers reversed the organization of this equivalent pair suggests that their generation was replacing *ixkoya'* and *saq'ul*, which in the children's generation they had been almost replaced (see table 2.11). All the bilingual children borrowed the Spanish equivalent *tomate* and 67 percent of the monolingual children borrowed it as well. *Saq'ul* was not completely replaced by the children, since 37 percent of the bilinguals and 16 percent of the monolinguals borrowed.

Bilingual Ixb'alam also subordinated *saq'ul* to its L2 equivalent and two other bilinguals, Säqche' and María Angélica, subordinated other L1 lexemes to their L2 equivalents. In other words, 37 percent of the bilingual children accessed L1 lexemes via the lexemes of L2:

(16)	Säqche'	Ixb'alam	Ma. Angélica
	'eggs'	'bananas'	'mushroom'
Language 2	huevos	bananos	hongos
	|	|	|
Language 1	saqmolo'	saq'ul	oko'x

These data suggest that these equivalent pairs had been reorganized, i.e. L1 lexemes were subordinated, in the children's lexicons, possibly due to their frequency of use and the socioeconomic values that these items had in the community. Since I propose that *L1 subordination* can lead to lexical replacement, the data in (16) suggests that the subordination of L1 lexemes was at its initial stages because these particular lexemes had the status of speech borrowings. In other words, they did not have a loanword status because the adults showed no evidence that these borrowings had been integrated in their lexicons (see section 2.2.2.2).

Two monolingual children also subordinated the equivalent lexical pairs for *corn*, *mushroom* and *tortillas*. Mercedes was the only child who most consistently reorganized specific equivalent pairs.

(17)	Mercedes		Lorena
	'corn'	'mushroom'	'tortillas'
Language 2	elote	[ongoʃ]	tortillas
	|	|	|
Language 1	öj	oko'x	wäy

Thirty percent of the bilinguals borrowed the Spanish equivalent *tortillas* and sixteen percent of the monolinguals borrowed it as well. María Angélica also reorganized the equivalent pair for *mushroom*, while Mercedes phonologically assimilated it. I have presented

evidence in support of the subordination of lexical items from L1, as well as its relation to lexical replacement. L1 subordination, as has been observed, may ultimately lead to language shift such that the younger monolingual children of this study did not acquire Kaqchikel *ixkoya'* but rather acquired its Spanish equivalent *tomate*.

Concerning the living things semantic field, participants from the three groups also accessed lexemes of L1 through their L2 equivalent lexemes. María Reymunda, Dolores and Josefa of the adult group accessed some Kaqchikel lexemes through this process:

(18)

	Ma. Reymunda & Josefa	Dolores & Josefa
	'fish'	'spider'
Language 2	pescado	araña
	|	|
Language 1	kär	äm

María Reymunda and Josefa accessed the L1 lexeme *kär* through its L2 equivalent *pescado*. Note that it is also this Kaqchikel lexeme that was shifting, especially among the younger generation, since it was borrowed by 87 percent of the bilingual children, 83 percent of the monolingual children and a significant 25 percent of the adults (see table 2.15). Furthermore, the correlation between *L1 subordination* and replacement seems justified, since again, 75 percent of the bilingual children and 50 percent of the monolingual children borrowed the Spanish equivalent of the L1 *araña*.

The bilinguals showed that in some of their lexical equivalent pairs the L1 lexemes had been subordinated as well; for instance, María Angélica and Säqche' accessed target lexemes of L1 via the lexemes of L2:

Note that Mercedes and Yaxum retrieved the same two L1 lexemes, *äk* and *ch'oy*, through their L2 equivalents. Of all monolingual children, Mercedes borrowed the most Spanish lexemes and subordinated more Kaqchikel equivalents to their Spanish equivalents than any other monolingual and bilingual child, which is further evidence for the correlation between these L1 subordination and lexical replacement.

Nonacculturated living things like *kär-pescado*, *äm-araña*, *tz'i'-perro* and *ratón-ch'oy* have become targets of replacement in the groups' lexicons. Eighty-seven percent of the bilingual group borrowed *pescado*, 75 percent borrowed *araña* and 37 percent borrowed *ratón*. Of the monolingual children, 50 percent borrowed *araña* and 83 percent borrowed *pescado*. The data in this section supported what has been discussed in previous sections, which is that some members of these three groups had reorganized some equivalent pairs in their lexicons, such that L1 lexemes were subordinated to their L2 equivalents. This L1 subordinating reorganization can lead to borrowing and ultimately lexical replacement, such that the younger generations acquire only the L2 lexical equivalent, which is the case with some of the lexical items of this study.

In the nature semantic field, only the children's groups accessed target lexemes of L1 via the lexemes of L2. Yaxum, Säqche' and María Angélica accessed the L1 lexeme *q'ij* through L2 *sol* to name the natural object *sun*. Only María Angélica accessed the Kaqchikel lexeme *ruxäq che'* through its Spanish equivalent.

(22)

	María Angélica, Yaxum and Säqche'	María Angélica
	'sun'	'leaf'
Language 2	sol	hoja
	|	|
Language 1	q'ij	ruxäq che'

The Kaqchikel lexeme *q'ij* has been subordinated to the Spanish equivalent in these children's lexicons. There seems to be a correlation between *L1 subordination* and replacement in this semantic field as well. The Spanish equivalent *sol* was borrowed by 25 percent of the bilingual children and 16 percent of the monolingual children. Moreover, the Spanish equivalent *hoja* was borrowed by half of the bilingual children and 25 percent of the adults (see table 2.23). Again, the data suggests a correlation between reversed subordination and borrowing.

Monolingual Mercedes, who has shown to access L1 lexemes through their L2 equivalents more than the other children, also showed to have subordinated L1 lexemes to their L2 equivalents in this semantic field.

(23)

	Mercedes		
	'tree'	'fire'	'moon'
Language 2	árbolo	fuego	luna
	|	|	|
Language 1	che'	q'aq	ik'

Mercedes attached the bound morpheme *-o* to the Spanish noun árbol 'tree' to indicate masculine gender; however, this results in an ungrammatical form, but also indicates that her contact with Spanish was so frequent that she had acquired the suffixation gender rule for nouns. All

of these examples showed that lexemes of L1 had become subordinated to L2. This process may lead first to borrowing, and, then to replacement or loss of the lexeme in L1. The L1 lexemes in (23) are slowly being replaced; the Spanish equivalent *luna* was borrowed by 27 percent, and *fuego* and *árbol* were borrowed by 16 percent of all groups.

María Angélica and Mercedes have subordinated the same L1 lexeme *xajab* and accessed it through its L2 lexeme equivalent. Mercedes accessed *pawiaj*, the L1 lexeme through its L2 equivalent.

(24)

	Ma. Angélica & Mercedes	Mercedes
	'shoe'	'hat'
Language 2	zapato	sombrerón
	|	|
Language 1	xajab	pawiaj

Interestingly, Mercedes attached to the lexical noun *sombrero* the bound morpheme *-ón*, which is generally an augmentative bound morpheme that means 'something or someone is real big' or 'someone does something constantly'. Mercedes' morphological derivation was marginally acceptable because *-ote* is the standard bound morpheme to derive 'big hat' *sombrerote*. Mercedes demonstrated again that her contact with Spanish was so frequent that she had learned this morphological rule, and, like any child acquiring a first language, had overgeneralized the rule. I consider the examples listed above as evidence for my proposal that these three groups were manifesting a reorganization of some equivalent pairs in their lexicons; reorganization which I have been calling *L1 subordination*.

In the people's names semantic field only a monolingual child, Mercedes, accessed a target lexeme L1 via the lexeme of L2, i.e., the Kaqchikel lexeme *tata'* was subordinated to its Spanish equivalent in Mercedes' lexicon.

(25)

	Mercedes
	'father'
Language 2	papá
	|
Language 1	rutata'

The interesting aspect of Mercedes' data is that they allude to a 'fluid' monolingual lexicon to which Spanish equivalent lexemes were consistently being integrated and that these Spanish equivalents subordinated or replaced L1 lexemes. Furthermore, an important observation is that the Kaqchikel monolingual children, as well as the young adults, demonstrated to have acquired equivalent pairs without acquiring the L2 grammar.

In conclusion, these data supports my proposal for the reorganization, *L1 subordination*, of specific L1 lexemes in the lexicon of Kaqchikel speakers, who live in conditions of permanent language contact. Moreover, this reorganization takes place across the monolingual and bilingual generations. Finally, this type of lexical organization, as has been shown, may ultimately lead to lexical replacement such that the younger generations may acquire only the L2 lexical equivalent.

Chapter III

The Morphology of the Kaqchikel Transitive Verb

In this chapter I turn to the issue of morphological acquisition. In particular, I examine Kaqchikel verbal inflection, which is considered the morphophonological realization of abstract morphosyntactic representations in the internal structure of the verb. The goal is to explore the acquisition of verbal inflection by the eight bilingual children, to test how well they know Kaqchikel verbal morphology and how this knowledge is predicted by the different levels of lexical knowledge that I reported in the previous chapter. In other words, could a bilingual child be predicted to have attained a high degree of competence at inflecting verbs if she/he has attained a high degree of lexical competence in Kaqchikel?

In what follows, I focus mainly on the internal structure of the transitive verbs that the children produced to test if the bilingual children have acquired the range of verbal inflections that the Kaqchikel language provides. I also analyze the morphophonological and morphosyntactic processes that bilingual children undergo in the production of transitive verb inflection. I adopt Aronoff's (1994) assumption that inflectional morphemes are part of morphosyntax and his definition of morphosyntax as the aspect of syntax that is relevant to morphology; thus, I discuss morphosyntax only when it is relevant to verb inflection.

In the first section of this chapter, I describe the particular aspects of the Kaqchikel morphological system that are relevant to this study. In the second section,

I examine the data regarding the children's knowledge of verb roots and stems[1]. In the third section, I present and discuss the following children's data: (1) ergative case; (2) absolutive case; (3) complex verbs and inalienable direct objects; and (4) reciprocity. The conclusion of this chapter is presented in chapter V.

3.1 The Kaqchikel Morphological System: What do Kaqchikel-Maya children need to know?

I present in this section a brief sketch of the inflectional system of the Kaqchikel verb and noun as well as prepositional phrases (PPs) and other basic aspects of the Kaqchikel grammatical system that the children were tested on to determine their various levels of language knowledge. Hence, this grammatical sketch is relevant to the analysis and description of their knowledge of Kaqchikel and to the data that was collected. I have based the following sketch on Patal, *et al* (2000), García and Rodríguez (1997), Chacach (1990).

3.1.1 General Structure of the Kaqchikel Verb

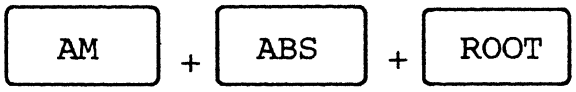
Kaqchikel has a VOS constituent order in declarative sentences and is morphologically an ergative-absolutive language. In the ergative-absolutive system, the inflectional morpheme set that cross-references (or agrees with) the subject of a single-argument clause

---

[1] Traditionally, a root is defined as morphologically unanalyzable and a stem as the element of word structure to which inflectional affixes are attached (Crystal 1992). Here, I adopt Aronoff's definitions of root and stem. He considered that both stem and root are sound forms, but they only differ in that 'a stem is always defined with respect to a realization rule...root thus abstracts away from all morphology' (1994:40).

differs from the set of inflectional morphemes that cross-reference (or agree with) the subject and direct object of a multiple-argument (transitive) clause. The former type of clause is generally classified as intransitive and in the verb absolutive case inflections cross-reference the subject of the clause. The latter type is classified as transitive; ergative case inflections cross-reference the subject in the verb, while absolutive case inflections cross-reference the direct object of the clause. In this study, I assume that the subject and direct object positions are subcategorized for by a transitive verb. They are assigned a single (external) agent argument and a single (internal) patient or theme argument. I also adopt Dixon's 1994 terminology, who has referred to the cross-referencing of the subject and direct object in the verb as 'morphological ergativity'. He also has distinguished ergative-absolutive languages from nominative-accusative languages. He has termed the subject of a single argument clause *S*, the subject of a multi-argument clause *A*, and its object *O*. The morphological ergativity of the Kaqchikel transitive and intransitive verbs is schematized in (1).

(1a)



(1b)

The basic structure of the Kaqchikel intransitive verb, illustrated in (1a), consists of a stem or root to which absolutive (ABS), and aspect or mood (AM) prefixes are attached; for instance (García and Rodríguez 1997):

(2) *Xatetz'an.*

x - at - etz'an

Completive ABS2pl play

You played.

In example (2) the absolutive second person plural affix, *-at,* attaches to the verb stem and the inflected verb is marked with completive aspect. An optional movement verb stem may be affixed, which, if present, is preceded by the absolutive subject prefix and the aspect-mood prefix; for instance *xatuletz'an* 'you came to play'. In Kaqchikel, intransitive verbs can be derived from transitive verbs, adjectives and prepositions. Also, intransitive verbs may also be derived into participle verb forms, causative verbs and agentive nouns via suffixation.

Two types of Kaqchikel transitive verbs may constitute the most basic structure illustrated in (1b) and these are known as radical and derived verbs in Mayan studies. However, for both types of transitive verbs, the inflections cross-reference the subject and direct object and provide information about grammatical person and number. Morphophonological changes occur on these verbs after affixation; for instance, the quality of the radical transitive verbs, which are monosyllabic, changes after affixation (García and Rodríguez 1997):

(3)	Root	Prefix			Suffix	Gloss
	mës	***t*** - *a* -	*mes*	-	***a'***	You sweep it.
		t - *a* - *b'e* -	*mes*	-	***a'***	You go sweep it.

The examples in (3) show that imperative mood requires the affixation of the prefix *t-* and the suffix *-v'* (vowel and glottal stop) to the root, which causes the vowel quality of the root to change from a [+ lax] vowel to a [-lax] vowel, i.e., /ë/ -> /e/. However, the affixation of the movement prefix *b'e-* does not cause the vowel to change its quality; it remains as a [-lax] vowel. Thus, both *tamesa'* and *tab'emesa'* manifest a change in the vowel quality of the root.

The second type of verb that may constitute the basic structure of the transitive verb indicated in (1b) is the derived transitive verb. This type of verb can be derived from nouns, adjectives, intransitive verbs, and numerals by attaching the suffixes *-j*, or *-a'*. The majority of these verbs end with the former suffix, and, unlike the radical transitive verbs, the derived transitive verbs consist of more than one syllable; for instance:

(4)	Root	Derived Form
	atin-	*-atin**isaj***
	bathe	to bathe someone
	ch'äm-	*-ch'am**irisaj***
	acid	to cause acidity
	kotz'-	*-kot'z**ob'a***
	laid down	to lay down someone

In (4), the intransitive verb *-atin* and the adjective *ch'äm* become transitive verbs by affixation. The suffix *-Vsaj* is a causative transitivizing suffix, whose initial

vowel is [i]. Also, the suffix *-Vb'a* is a causative transitivizing suffix, but whose initial vowel [o] harmonizes with the vowel in the root. The type of derivation illustrated in (4) is productive in the language.

3.1.2 Kaqchikel Aspect

Kaqchikel has inflections for aspect instead of tense, although it can mark tense with adverbial phrases. Five types of aspect are part of the Kaqchikel verbal system: incompletive, potential, progressive, completive and perfective. The incompletive, potential, and completive aspects are marked with prefixes. However, the perfective requires a suffix instead of a prefix and the progressive requires an auxiliary verb. Kaqchikel may also mark the indicative and imperative moods, of which the imperative has its own set of inflections. Of these various aspects and moods, I consider only those that are relevant to the children's data. In (5), the prefixes that indicate aspect in Kaqchikel are listed, as well as those that are attached to preconsonantal or prevocalic absolutive prefixes.

(5)

Aspect	**Prefix**	**Absolutive 3sg Prefix**	
		Preconsonantal	Prevocalic
Incompletive	*y-*	*n-*	*n-*
Completive	*x-*	*x-*	*x-*
Potential	*xk-*	*xti-*	*xt-*

The noncompletion of an action is marked with the prefix *y-*, while its completion is marked with the prefix *x-*. The prefix *xk-* marks potential aspect, i.e., it indicates that a future action is probable, possible, or

hypothetical. Interestingly, the aspect system of Kaqchikel makes an important distinction regarding the absolutive third person singular prefix. This prefix is a null prefix, which motivates a different set of aspect prefixes, particularly, for the incompletive and potential aspects. In other words, it is the absence of a third person singular absolutive prefix that motivates a set of aspect prefixes that pay special attention to the preconsonantal and prevocalic nature of the verb roots to which they are necessarily attached. Thus, the aspect prefixes listed in (5) are conditioned by the 'presence' of the null absolutive prefix for third person singular; for instance:

(6) a. *Nwa'.*
n - Ø - wa'
INCOMPL ABS3sg eat
He eats.

b. *Xtiwa'.*
xti - Ø - wa'
POTEN ABS3sg eat
He will eat.

c. *Natz'ët.*
n - Ø - a - tz'ët
INCOMPL ABS3sg ERG2sg see
You see her/him.

d. *Xtatz'ät.*
xt - Ø - a - tz'ët
POTEN ABS3sg ERG2sg see
You will see her/him.

The examples in (6) demonstrate that even though the third person singular prefix is null, the particular

aspect marker that is attached indicates its presence indirectly. Examples (6a-b) show the 'attachment' of the null absolutive third person singular prefix to the intransitive verb *-wa'* 'to eat' via the incompletive aspect prefix *n-*, and the potential preconsonantal aspect prefix *xti-*. The examples in (6c-d) show the 'attachment' of the null absolutive prefix to the transitive verb *tz'ët* 'to see' via the incompletive aspect prefix *n-*, and the potential prevocalic aspect prefix *xt-*. These examples demonstrate that the aspect markers are conditioned by the 'presence' of the absolutive null third person singular prefix.

Turning to the progressive aspect, it is marked through the intransitive stem *-tajin*, and functions as an auxiliary. Marking progressive aspect on an intransitive verb requires that both the auxiliary and verb stem be inflected with the appropriate absolutive prefix. A transitive verb requires that the *O* be marked on the auxiliary with an absolutive prefix, and that the transitive stem be marked with an ergative prefix for the *A*. The following examples from García and Rodríguez (1997) illustrate progressive aspect marking in intransitive and transitive verbs:

(7) a. *Yintajin yinatin.*

y - in - tajin y - in - atin
INCOMPL ABS1sg be INCOMPL ABS1sg bathe
I am bathing.

b. *Yetajin yekito'.*

y - e - tajin y - e - ki - to'
INCOMPL ABS3pl be INCOMPL ERG3pl ABS3pl help
They are helping them.

In (7a) the auxiliary and the verb are inflected with the prefix *in-* that indicates first person singular in absolutive case. In addition, the incompletive aspect prefix *y-* is inflected on the auxiliary *-tajin* and the intransitive verb root *-atin* 'to bathe'. The same incompletive aspect prefix is inflected in the auxiliary and the transitive verb stem *-to'* 'to help' in (7b), where *O* is marked with the absolutive third person plural prefix, and *A* is marked with the ergative third person plural prefix. Hereafter, I refer to the aspect markers as INCOMPL (incompletive), COMPL (completive), POTEN (potential) and PROG (progressive).

3.1.3 Ergative and Absolutive Morphology in Kaqchikel

It is a tradition in Mayan language studies to name the ergative-absolutive systems as sets. The prefix paradigm that marks ergative case in the verb of a multi-argument clause *A* is known as set 'A', while the prefix paradigm that marks absolutive case in the verb of a single argument clause *S* is known as set 'B'. Furthermore, et 'B' also marks O (direct object) in the verb of a multi-argument clause.

(8)

	Absolutive Case	Ergative Case	
	Set B	**Set A**	
Person		Preconsonantal	Prevocalic
1SG	*in-*	*nu-*	*w-*
2SG	*at-*	*a-*	*aw-*
3SG	*Ø*	*ru-*	*r-*
		u-	
1PL	*oj*	*qa-*	*q-*
2PL	*ix-*	*i-*	*iw-*
3PL	*e-*	*ki-*	*k-*

Each grammatical person has a prefix in set B, except for the third person singular, which is a null prefix. With respect to this set, the communities of Tecpán and Semetab'äj present dialectal variation regarding the *in-* and *at-* prefixes; their consonants are deleted when they precede the third person singular ergative prefixes *r-* and *ru-*. In contrast with set B, in set A most grammatical persons have preconsonantal and prevocalic prefixes or allomorphs. Of the set A allomorphs, the 3sg is the exception; it has three allomorphs *r-*, *ru-* and *u-*. The latter allomorph can only be preceded by the absolutive third person singular null prefix. Thus, children acquiring Kaqchikel would need to know the constraints for each allomorph in ergative and absolutive case, as well as the dialectal variation that the *in-* and *at-* prefixes present. In (9), some examples that inflect ergative and absolutive case[2] in the verb are presented:

[2] Hereafter, I refer to these two cases as ERG (ergative) and ABS (absolutive), while the person markers are referred as follows: 1sg represents first person singular; 2sg represents second person singular; 3sg represents third person singular; 1pl represents first person plural, etc.

(9) a. *Xojrunäq.*

x - oj - ru - näq

COMPL ABS1pl ERG3sg bother

She/he bothered us.

b. *Xunäq.*

x - Ø - u - näq

COMPL ABS3sg ERG3sg bother

She/he bothered her/him.

The example in (9a) shows that the allomorph *ru-* is inflected obligatorily if the absolutive prefix is other than the third person singular. In this case, absolutive case is inflected with the 1pl prefix *oj-*. Example (9b) shows that the presence of the allomorph *u-* is conditioned by the presence of the null absolutive third person singular prefix. Also both allomorphs, *ru-* and *u-*, are attached to the consonant initial verb root *-näq* 'to bother' and both are inflected with *x-*, the completive aspect marker.

The *Academia de las Lenguas Mayas de Guatemala* (ALMG[3]) is an important institution for the Maya people, which, among other things, promotes linguistic and cultural research, bilingual education, as well as making official the use of the Mayan languages. The Kaqchikel sector of the academy, in its efforts to standardize the Kaqchikel Maya language, has prescribed the use of the ERG1sg allomorphs that were listed in (8). This prescribed change took place in the last decade and both the standard and nonstandard forms are listed the following:

[3] The Academy of Mayan Languages of Guatemala

(10) **Ergative Case**

Person	**Standard**		**Nonstandard**	
	___C	___V	____C	____V
1SG	nu-	w-	in-	inw-
			nw-	n-

The nonstandard forms are found as late as 1988 in the Kaqchikel grammar published by the *Universidad Rafael Landivar*, but by 1994 the prescribed form is found in grammatical descriptions of Kaqchikel such as in *Rutzi'b'axik ri Kaqchikel* 'Manual for writing in Kaqchikel'. Thereafter the prescribed form is found in Kaqchikel grammars without providing a rational for the prescribed form. Nevertheless, the motivation for the prescribed form is twofold. The first motive is to make more uniform and systematic the use of the ERG1sg form that is inflected in the verb and the noun; for instance:

(11)

Noun	**Standardized Form**	**Nonstandardized Form**
***nu**wuj*	*yenuto'*	*yeinto'*
my book	I help them.	I help them.

The standardized ERG1sg prefix *nu-* would be used to mark possession in *nuwuj* and the subject or *A* in the transitive verb *yenuto'*. The second motive for this standardized form is that *nu-* has been documented to be the diachronic form of the ERG1sg prefix; it has been found in ancient documents such as the Popol Wuj. Even though, the Kaqchikel Academy has prescribed *nu-* as the preconsonantal ERG1sg allomorph, it has not spread through the community of Tecpán; for instance, the monolingual and bilingual children of this study, and three of mothers whom I was able to interview used the nonstandardized forms. Hereafter, I am faithful to the

speech of Tecpán speakers, and I only include the nonstadardized adult Kaqchikel forms in ERG1sg.

3.1.4 The Kaqchikel Complex Verb and Inalienable Direct Objects

The particular characteristic of the Kaqchikel complex verb is that an inflected verb plus another morpheme (bound or free) come together to give meaning to the verb, which may be an intransitive or transitive verb stem. In (12), there are examples of inflected verbs that are obligatorily joined by either a fee or a bound morpheme to create a complex verbal form: and the morpheme that is realized as the direct object of the verb phrase may be free or possessed; for instance:

(12) a. *Xub'än jäb'.*

x - Ø - u - b'än jäb'
COMPL ABS3sg ERG3sg do rain
It rained.

b. *Xinpajk'ij waqän.*

x - Ø - in - pajk'ij w - aqän.
COMPL ABS3sg ERG1sg trip ERG1sg leg
I tripped.

Example (12a) is representative of one of the four subgroups of Kaqchikel complex verbs, which consists of a transitive verb plus a noun or a verbal noun. The noun and free morpheme *jäb'* which means 'rain' is obligatorily adjoined to the verb stem *-b'än* 'to do' that is inflected with the completive aspect and third person singular prefixes. This inflected complex verb literally means 'it made rain'. The example in (12b) belongs to a different subgroup of complex verbs. This subgroup must

consist of a transitive verb and a noun in genitive case. The particular characteristic of this subgroup is that the noun is the explicit *O* (direct object) and it is marked with ergative case to indicate possession, and the nouns generally denote body parts such as *waqän* 'my leg' in (12b), which literally means 'I tripped my leg'. Thus, the generalization is that if an action is directed toward a inalienable noun, such as a body part, this noun phrase or direct object must be inflected with ergative case; for example:

(13) a. *Xuchöp nujolon.*

x - Ø - u - chöp nu - jolon.
COMPL ABS3sg ERG3sg touch ERG1sg head
She touched my head.

b. *Xinjik nuwi'.*

x - Ø - in - jik nu - wi'.
COMPL ABS3sg ERG1sg comb ERG1sg hair
I combed my hair.

The examples in (13) indicate that the recipient of the action is a specific part of the person's body; hence, it must be marked with genitive case. These types of genitive nouns constitute the internal argument of the verb, i.e., the patient theta role. In (13a), the direct object *jolon* 'head' is marked with the ERG1sg prefix *nu-*; and in (13b) the object *-wi'* 'hair' is also marked with the same case prefix. Both noun forms must be marked in genitive case, but the difference between them is that in (13b) *-jik wi'* 'to comb hair' is a complex verb, i.e., the presence of the noun *wi'* (hair) is obligatory, while in (13a) the noun *jolon* 'head' is not an obligatory noun of the verb.

Both forms in (13) structurally resemble their English equivalents, in that the verb 'comb' and 'touch' must be expressed with their complements in possessed form; thus, 'I comb my hair' and 'she touched my head' are grammatical English structures. While, the structures 'I comb hair' and 'you touched head' are not grammatical; however, in Spanish they are. In other words, the Spanish equivalents of (13), 'she touches me the head' and 'I comb the hair myself' are grammatical when the direct objects are not marked in genitive case. This is an important grammatical difference between Kaqchikel and Spanish; a difference that children need to acquire.

3.1.5 The Kaqchikel Reflexive and Reciprocal Forms

The reflexive and reciprocal forms of Kaqchikel are also structurally complex forms, which children also need to acquire. These forms require an inflected verb plus the bound morpheme *-i'* known as a relational noun. A relational noun (henceforth RN) is a noun that is labeled as such due to its inflectional requirements, its grammatical properties, and the number of functions that it plays. Kaqchikel relational nouns (RN) may correspond to English prepositions that mark the indirect object, adjectives and agent by-phrases.

(14) *Xaxib'ij awi'.*

x	-	Ø	-	a	-	xib'ij	aw	-	i'
COMPL		ABS3sg		ERG2sg		scare	ERG2sg		RN

You got scared.

A relational noun must also be marked with ergative case to indicate the number and person of the subject co-

referenced in the verb. In (14), the ERG2sg prefix *a-* was attached to the relational noun *-i'* to indicate cross-reference with the *a-* in the verb.

3.1.6 The Kaqchikel verb root *-b'än*

Actions that are not common in Kaqchikel Mayan culture may have no lexical expression in Kaqchikel; thus, these actions are expressed with the transitive verb *-b'än* 'to do' and a borrowed Spanish word in infinitive form. Muysken (2000) named this type of verbs 'bilingual verbs'; however, the problem with using this label is that describes both the type of speaker and the number of systems involved, and in the case of the Kaqchikel Maya community, both bilinguals and monolinguals use this type of structure. Thus, in this study I call this type of verbs 'mixed verbs'. Generally, the Spanish verbs that are involved in this type of structures[4] may involve administrative activities or recent technology:

(15) a. *Xub'än <u>fotocopiar</u>.*

x	- Ø -	u	- b'än	fotocopiar
COMPL	ABS3sg	ERG3sg	do	Spa-photocopy

She photocopied it.

b. *Xqab'än <u>archivar</u>.*

x	- Ø -	qa	- b'än	archivar
COMPL	ABS3sg	ERG1pl	do	Spa-archive

We filed it.

The examples in (15) show mixed verb structures, which require the transitive verb *-b'än* 'to do' functioning as

[4] Hereafter, I adopt the practice of underlying Spanish elements in the sample sentences.

a helping verb, and the Spanish verb is in infinitive form.

3.1.7 The Kaqchikel Indirect Object

In Kaqchikel, the patient or benefactor of an action is encoded through the preposition *chi* 'to' and a complex inflected morpheme that consists of an ergative case prefix and the relational noun *e*. Table (16) lists these prepositions for each grammatical person:

(16)

Preposition	ERG+e				Contractions	Gloss
chi	w+e	chi we	->		chwe	to me
chi	aw+e	chi awe	->		chawe	to you
chi	r+e	chi re	->		che	to her/him
chi	q+e	chi qe	->		chqe	to us
chi	iw+e	chi iwe	->		chwe	to you
chi	k+e	chi ke	->		chke	to them

The inflected forms of the prepositional phrases may also be contracted. The ERG1sg, ERG2sg and its plural counterpart delete the vowel [i] of the preposition *chi* 'to' due to the non-permissibility of two adjacent vowels in Kaqchikel. García and Rodríguez (1997) suggest that these phonological deletions occur by analogy. An example of the indirect object construction from García and Rodríguez (1997) is:

(17) *Taya' jun wäy chi we.*

T	-	Ø	-	a	-	ya'	jun	wäy
IMP		ABS3sg		ERG2sg		give	a	tortilla
chi		w	-	e				
Prep		ERG1sg		RN				

Give me the tortilla!

The verb is inflected in imperative mood and with the ERG2sg prefix. The relational noun in the prepositional phrase is inflected with the ERG1sg prefix. This example does not show deletion or contraction.

3.1.8 The Kaqchikel Noun

The ergative case paradigm in (8) is also used to mark genitive case in nouns. Nouns may be affected morphonologically when they are in genitive case:

(18)

	Noun	Genitive Case	Gloss
a.	*wäy*	*kiway*	their tortillas
b.	*jolomaj*	*kijolom*	my head
c.	*b'aq*	*qab'aqil*	our bones

The example in (18a) shows that the noun *wäy* has a [+lax] vowel, and it changes to [-lax] when it is marked with genitive case. If the noun ends with the suffixes *-aj*, *-ej*, *-ij*, *-axel* and *-ätz*, the suffix is deleted when it is marked with genitive case as it is shown in (18b). In (18c), the suffix *-Vl* (vowel+lateral) is attached when a noun referring to a body part is marked with genitive case. Also, there are some nouns that are never marked with genitive case, e.g., *ch'umil* 'star', *kaj* 'sky', *q'ij* 'sun', *ik'* 'moon', etc. Of these, the last two may be used in special constructions: *qati't ik'* 'our grandmother, the moon' and *qatata' q'ij* 'our father, the son'. There are other nouns that are always marked with genitive case, e.g., *ruxaq* 'his piece of paper' and *raq'* 'his tongue'. The last example constitutes an example of inalienable possession, i.e., it is a part/whole relation.

Plural inflection is a marked inflectional structure in Kaqchikel. That is, only certain nouns that refer to people and some animals are pluralized with the plural suffixes *-a'* and *-i'*, both of these suffixes may be inflected as follows:

(19)

Vowels	Suffix	Examples	Gloss
[o], [u], and [a]	*-i'*	*ixoq -> ixoqi'*	women
[i] and [e]	*-a'*	*utiw -> utiwa'*	coyotes

The suffix *-i'* is inflected on nouns whose final vowel is [+round] or [+central], and the suffix *-a'* is inflected when [+front] a [-round] vowel is part of the noun's root.

These plural forms may be replaced by the particle *taq* which indicates is both a pluralizer and a particle; for instance (García and Rodríguez 1997):

(20) a. Xekichäp ri taq umül ri (taq) nutz'i'.
x - e - ki - chäp ri taq umül
COMPL ABS3sg ERG3pl grab the PLU rabbit
ri (taq) nu - tz'i'
the (PLU) ERG1sg dogs
My dogs grabbed the rabbits.

b. Nkitïj ixim ri taq äk'.
n - Ø - ki - tïj taq ri äk'
INCOMPL ABS3sg ERG3pl eat PLU the hens
The hens ate the corn.

Both *tz'i'* and *umül* in (20a) may be pluralized with the particle *taq* and both are cross-referenced with their respective plural prefixes in the verb. In comparison, the subject *äk'* in (20b) was pluralized with the particle *taq* and was cross-referenced as such in the verb, but the direct object *ixim* was not pluralized with *taq* and was

cross-referenced as a singular noun. Thus, Kaqchikel may or may not pluralize animate and inanimate objects with the particle *taq*.

3.1.9 The Kaqchikel Pronoun

The pronoun in Kaqchikel has certain amount of variation in the first person singular form and the Kaqchikel Language Academy has proposed to standardize this form as follows (García and Rodríguez 1997):

(21)

PERSON	FORMS		
	Standardized	Tecpán	Semetab'äj
1SG	*rïn*	*yin*	*rin*
2SG	*rat*	*rat*	*rit*
3SG	*rija'*	*rija'*	*rya'*
1PL	*röj*	*roj*	*ryoj*
2PL	*rïx*	*rix*	*rïx*
3PL	*rije*	*rije'*	*rye'*

In (21) the standardized forms of the independent pronouns are listed along with the forms of the dialects spoken in municipalities of Tecpán and Semetab'äj. These independent pronouns may be used for emphasis, with stative structures, with numerals, etc.

(22) a. *Rin chuqa' yenub'än.*

rin chuq'a y - e - nu - b'än
I also INCOMPL ABS3sg ERG3sg do
I also make them.

b. *Xa xe wi chïk rija' k'äs, cha'.*

xa xe wi chïk rija' k'äs cha'
PAR PAR ADE PAR he awake says
Only he was awake, he says.

The emphasis of the pronoun *rîn* 'I' is shown in (22a). The 3sg Kaqchikel pronoun *rija'* along with the adjective *k'äs* 'awake' indicate a physical state. Turning to the data of this study, the children did not produce the standardized forms *rîn* 'I' and *röj* 'we'. They produced instead *yin* 'I' and *roj* with a [+tense] vowel. However, these forms are part of the Tecpán dialect, which lacks four of the [+lax] vowels of the language; it only has [ü].

3.2 The Data

The discussion and analysis of the data, listed in appendix F, is organized as follows. The first section presents an analysis of the children's knowledge of verb stems. The second and third sections present descriptions and analysis of ergative and absolutive case inflection of each of the six grammatical persons. I conclude with a summary and discussion of the children's morphosyntactic levels of knowledge as they were reflected in the data.

3.2.1 Verb Stems

Kaqchikel inflected verbs are potential clauses, which in this study represent the observations and interpretations made by the bilingual children about events presented to them. The children's interpretations reflect their focus on certain aspects of an event, and unlike with the observation and interpretation of concrete objects, they had more flexibility for creativity and had at their disposal a wide range of verbs with which they could potentially describe an event. The children provided

interpretations for all the events presented to them for description, and supplied numerous verbs that were not expected. I have consider these verbs replacements and created the following semantic, pragmatic and argument selection criteria for their acceptability:

> A verb is acceptable as a replacement if only if it has the same argument structure, i.e., an internal and external argument, and semantically and pragmatically describes the event in question.

These criteria permit me to exclude intransitive and ditransitive verbs. Even though, some of these verbs were acceptable semantically and pragmatically, they were excluded due to their different argument structures. That is, intransitive verbs require one argument, and ditransitive verbs require three arguments. These criteria allowed me to account for and describe only the inflectional morphology of transitive verbs, whose argument structure consists of two arguments and two theta roles.

We elicited the description of events that resulted in 84 inflected verbs based on 22 transitive verb roots and stems. These transitive verbs are grouped as follows: six cutting verbs, seven tidying and cleaning verbs, four affection verbs, three physical force verbs, and two eating verbs (see appendix F). These twenty-two verb stems and roots that are calculated on table (1) only represent the first occasion in which the children used them to describe an event. The experiencer verb *-tz'ët* 'to see' and the verb *-ya'* 'to put on' were not included because they were part of indirect input. In other words, these verbs were used as part of the

commands given to the children; they were asked to see someone or to put a missing feature on a doll's face. Thus, I did not include them in tables (1) and (2) of this section. Hereafter, the first name initials and the ordinal numbers in subscript form indicate the child's name and age in all the tables of this chapter: Ervin (E_9), Säqche' (S_8), Tojil (T_9), Yaxum (Y_8) and Kot (K_8). The second name initial is used for María Angélica (A_9), and the initial consonant of the second syllable is used for Ixmukane (M_{10}) and Ixb'alam (B_9).

The four categories that are included in table (1) are labeled in roman numerals and are organized as follows: (I) the number of appropriate verb stems and roots; (II) the number of replacements; (III) the number of mixed verb forms; and (IV) the number of inappropriate verb roots and stems. Inappropriate verb roots and stems include intransitive verbs and ditransitive verbs. The children's results are listed starting from the highest to the lowest percentages. The total percentages for each child at the bottom of the table include only the results for the appropriate verbs (I) and replacements (II) categories.

Table 3.1 Use of verb roots and stems

	E_9		A_9		M_{10}		S_8		K_8		Y_8		B_9		T_9	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
I	13	59	10	45	13	59	9	41	4	18	5	23	5	23	5	23
II	7	32	10	45	6	27	4	18	8	36	6	27	5	23	4	18
III	-		-		-		6	27	9	40	9	40	5	23	9	41
IV	2	9	2	9	3	14	3	14	1	4	2	9	7	32	4	18
TTL	20	90	20	90	19	86	13	59	12	55	11	50	10	45	9	4

Thirty-seven percent of the group (Ervin, María Angélica, and Ixmukane) provided the largest numbers of expected verbs, i.e., they scored above the 90th percentile. Although these children produced inappropriate verbs, they did not produce any mixed verbs. In contrast, the rest of the group (75%) provided the lowest number of expected verbs. They scored below the 60th percentile, produced mixed verbs, and replacements. All the children provided verbs that were not expected, but were acceptable; e.g., María Angélica produced the largest percent (45%) and Yaxum the lowest (14%). Interestingly, most of the group (75%) made wide spread use of mixed verbs. Yaxum supplied the largest number of these forms (45%), and Kot the lowest (18%). All children produced some type of inappropriate verb; these include intransitive ditransitive verbs. A more detailed discussion of the verbs supplied by the children follows.

Verbs that identify acts of cutting in Kaqchikel specify the type of object, e.g., glass, paper, eggs, tree branches, etc., or the instrument that is used to cut the object with, e.g., hands, scissors, sharp instrument, etc. The six verbs included in this group

are: *-ch'ol* 'to peel', *-ch'up* 'to cut with the hand', *-q'äj* 'to break tree branches', *-tzak'ij* 'to cut with scissors', *-retz* 'to tear up' and *-sokaj wi'* 'to cut men's hair'. Although the actions represented by the verbs *-ch'ol* 'to peel' and *-q'äj* 'to break tree branches' do not require a cutting instrument, I have classified them with the cutting verbs because they conceptually encode an event in which a whole is separated in two parts.

The children's results for the cutting type of verbs clearly indicate that their knowledge of the properties and uses of the different cutting verbs in Kaqchikel were still in development. The data also show that some children made generalizations and semantic extensions; for instance, the verb *-paxij* 'to break glass or eggs' was used to replace *-q'äj* 'to break tree branches' for the adult form *nuq'äj ri che'* 'she breaks the stick' by half of the children. The semantics of the verb *-paxij* did not match the pragmatics of the event, i.e., the *O* (absolutive direct object) was a wooden stick not an egg or glass. Another example is when the cutting instrument and the *O* were misrepresented with the use of *-qupij* 'to cut fabric or paper with a sharp instrument' and replaced the expected verb *-ch'up* 'to cut with the hand'.

The verb *-elesaj* 'to take off/out' most commonly replaced other cutting verbs; it was used by half of the children as a general verb to replace *-tz'akij* 'to cut with scissors', *-retz* 'to tear up' and *-sokaj wi'* 'to cut men's hair'. Interestingly, the verb *-sokaj wi'* 'to cut men's hair' was known by only one child. Lastly, some mixed verbs, such as *nub'än* <u>*cortar*</u> 'he cuts' and *nub'än*

pelar 'she peels', were used by some of the children (see category III in table 3.1) in contexts in which the actors and patients were non-Mayan, and perhaps this prompted these children to combine their verb forms with elements from both Kaqchikel and Spanish. This indicates that sociolinguistic factors were at play in the children's production of mixed verbs.

The verbs that the children as a group knew best were the most general verbs, i.e., the verbs with the broadest application. Sixty-two percent of the group knew best the verb *-retz* 'to tear up' and half the group knew *-q'äj* 'to break'. The group did not know the other verbs that well: *-ch'ol* 'to peel' and *-ch'up* 'to cut with the hand' were known by 37 percent of the group; and *tz'akij* 'to cut nails' and *sokaj wi'* 'to cut men's hair' were known by 12 percent of the group. Lastly, the verbs that were replaced with mixed verbs by the largest number of children were the verbs *-ch'ol* 'to peel', with 50 percent of the children using *nub'än pelar* 'to peel', and *sokaj wi'* 'to cut men's hair' with 37 percent of the children producing *nub'än cortar* 'to cut'.

Eight verbs were grouped as tiding and cleaning verbs and the verbs *-su'* 'to clean' and *-ch'äj* 'to wash' were most commonly used to substitute for other more specific verbs of this group. Some substitutions of specific verbs by general verbs were due to the children's personal choice, but others were due to the children not knowing the specific verb. For instance the verb *-pachuj* 'to braid' was elicited by presenting a drawing of Mayan women braiding hair of other women (see appendix H), but not one of the children knew this verb,

not even the girls for whom braiding is a daily activity. Ixmukane and Ixb'alam (25% of the group) used the more general verb *-jik* 'to comb hair', and María Angélica used the mixed form *nub'an trenza* 'makes a braid'. Säqche' and Ervin (25% of the group) used *-b'än (r)utzil* 'to fix'; and the other three (37% of the group) used the mixed forms, i.e., *nub'än trenzar* 'to braid', *nub'än arreglar* 'to fix' and *nub'än peinar* 'to comb'.

The explanation that the children supplied mixed verb forms due to the presumed ethnicity of the agent of the actions does not apply to the mixed verb forms because the agents and patients of the action were Mayan. That is, those who were combing hair and those who were being combed were Mayan. The lack of knowledge of the verb *-pachuj* 'to braid' may be either a case of lexical development, i.e., the children have not acquired yet the specific verb *-pachuj* 'to braid' or the verb may be falling out of use or may be a case of transference from Spanish. Regardless of the possible answer, the girls seemed to have compensated for their lexical gap by using *-jik* 'to comb' and the boys used *-bän rutzil* 'to fix' or a mixed verb. Furthermore, some of the children produced more mixed verbs than others; for instance, Kot used the mixed verb forms *nab'än poner* 'you put on' to describe what María Florencia had done. Thus, Kot no longer distinguished between Maya and non-Maya agents, indicating that he did not know the Kaqchikel verb *-kusaj* 'to put on'.

An interesting pattern surfaced in Tojil's data during the activity of adding missing features to a paper doll's face. In this activity, he produced three

different verbs: *xinya' rutz'am* 'I put on his nose', *xinte' ruwäch* 'I put on his eyes', and *xib'än poner ruchi'* 'I put on his mouth'. The first instance consists of the verb *ya'*, the second consists of his self-created verb *-te'* 'to give' and the third instance consists of a mixed form: *-b'än* with the Spanish verb *poner* 'to put'. Tojil's mother reported that even after some years of being corrected, he continued to use his self-created verb *-te'* along with the verb *-ya'*.

Yaxum, Kot, and Tojil continued to be sensitive to the background of some of the people depicted in the drawings. Two cases of interest are: *nub'än cepillar* 'to brush' which was used to describe a child brushing her teeth, and *nub'än lavar* 'to wash' and *nub'än limpiar* 'to clean' which were used to describe a woman washing her face. The child and the woman were clearly non-Maya (see appendix H), which could have motivated the children to use mixed verbs. Furthermore, the Kaqchikel language does not have a verb to describe the action of brushing of teeth. Thus, the children used the mixed form *nub'än cepillar* 'to brush' due to sociolinguistic factors, but also due to lexico-semantic factors, i.e., it was more a semantically ccurate to use the mixed verb *nub'än cepillar* 'to brush' than the verb *-ch'äj* 'to wash'.

To summarize, the verb *-elesaj* 'to take off/out' was produced by all the children, 87 percent knew *-ch'ajonîk* 'to wash' and *-kusaj* 'to put on', 62 percent knew *-atinsaj* 'to bathe', and 50 percent knew *-jik* 'to comb'. All the children knew the verb *-ya'* 'to put', and none knew the verbs *-chaqarisaj* 'to dry off' and *-pachuj* 'to braid'. Also, in the case of Yaxum, Kot, and Tojil (37%

of the group), mixed verbs were produced due to lexical gaps, sociolinguistic, and lexico-semantic factors.

Four verbs were grouped as affection verbs. Although for two of them, *-chöp* 'to touch' and *-kuch* 'to cover up', this classification might be a bit ad hoc, they are labeled as such because we, the interviewers, demonstrated affection when we acted out the actions represented by these verbs. Only 37 percent of the group produced the verb *-kuch* 'to cover up', which was substituted by the rest of the group with mainly four verbs. These verbs were: *-kusaj* 'to put on', *-q'uj* 'to cover with blanket', *-chop* 'to touch' and the mixed form *-b'än* *tapar* 'to cover up'. It is possible that the mixed verb was produced because I, a non-Mayan, was one of the interviewers. María Florencia and I acted out the action by covering each other with a large shawl.

Kaqchikel does not have an exact equivalent verb for the Spanish verb *acariciar* 'to caress/to pet', which explains that only 25 percent of the children produced the verb *-chöp* 'to touch' on the first occasion that this verb was represented in a drawing of a boy petting a dog. It is precisely the action of petting that motivated 50 percent of the group to produce the mixed verb *nub'än* *acariciar* *ri tz'i'*, which means 'he caresses the dog', instead of the adult form *nuchop ri tz'i'* 'he touches the dog'; however, one child produced the mixed verb *nub'än* *tocar* *ri tz'i'* 'he touches the dog' indicating that his use of a mixed verb was not motivated by semantic and pragmatic accuracy; but by the non-Maya background of the boy depicted in the picture.

The Kaqchikel verb *-q'etej* 'to hug' was provided by 62 percent of the group and was substituted by the rest of the group with three different verbs. These verbs were *-chop* 'to touch', *-ch 'elej'* to carry in arms' and the mixed verb *-b 'än* <u>*abrazar*</u> ' to hug'. The verb *-ch'elej* 'to carry in arms' was classified as pragmatically odd. There is evidence in these data that the children who produced these verbs did not know the verb *-q'etej* or that they had problems inflecting this verb, and, thus, resorted to replacing it with other verb. Only one child provided the compound verb 'to kiss' *-tzu'maj chi'* and the other children used the ditransitive verb *-ya'* 'to give', which was regarded as an unacceptable replacement. Thus, of the four verbs in the affection verb category *-q'etej* was the verb produced by the largest number of children (62%). Fewer children produced the other verbs: *-kuch* (37%), *-chop* (25%) and *-tzu'maj chi'* (12%). The same children who produced mixed verbs in the previous verb categories also produced them in this category, which suggests that sociolinguistic, lexico-semantic, and developmental factors were also involved in the production of these mixed verbs.

The verbs *nïm* 'to push', *-ch'ëy* 'to kick' and *-töq* 'to charge' were grouped in the physical force category. All of the actions that represent these verbs were presented in the form of drawings (see figures in appendix H). The data on the verb *-nim* 'to push' demonstrates that some children acquired it through the course of my visits. This verb was produced by 37 percent of the children; the majority of the children (62%) produced mixed verb forms with *-b'än* <u>*columpiar*</u> 'to

swing' and *-b'än* empujar 'to push'. Thirty-seven percent used *-b'än columpiar* and 25 percent used *-b'än empujar*. The latter group used *empujar* the Spanish equivalent of the Kaqchikel verb *-nïm* 'to push', which suggests that the children did not know the Kaqchikel equivalent. In comparison, the former group used the most exact verb for the action being described, and unlike Kaqchikel, Spanish provides the verb *columpiarse* that literally means 'to swing oneself'.

The verb *columpiarse* has reflexive and transitive properties, while Kaqchikel's *-kotin* 'to swing', the equivalent verb to Spanish *columpiarse*, has only intransitive properties. Therefore, the children used the most exact verbs Kaqchikel *-nïm* and Spanish *columpiarse*. Interestingly, by the third visit, ten months apart from the second visit, all the children recorded (87% of the group) produced *-nïm*. Thus, it seems very possible that 62 percent of the children, who used a mixed verb during the first visit, had acquired the verb *-nïm* and used it appropriately by the time of the third visit.

The children did not know well the other physical force verbs, *-ch'ëy* 'to hit' and *-töq* 'to charge'. The verb *-ch'ëy* was produced by thirty-seven percent. It was replaced with *-torij* 'to throw' (12% of the group), as well as with the compound verb *-ya' raqän* 'to give a kick' (50% of the group). The verb *-töq* 'to charge' was produced by 25 percent of the children, and the rest (75%) produced other Kaqchikel verbs or mixed verb forms. Thus, of these three physical force verbs, *-nïm* and

-ch'ëy were produced by the 37 percent of the group. These results may be explained by sociolinguistic factors; the children had not had direct experience, except for playing on a swing, with the events and contexts represented in the drawings.

The verbs *-tïj* 'to eat' and *-tzüq* 'to feed' were grouped in the eating and feeding category. All the children produced the verb *-tïj* 'to eat', while the transitive verb *-tzüq* 'to feed' was not produced by any of the bilingual children[5]. All the children used the verb *-ya'* 'to give' instead; however, it was considered an unacceptable replacement due to its argument structure.

In sum, two verbs were commonly used as replacements. The verb *-ya'* with the meaning 'to give'; for instance, *nuya' aqän* 'she gives a kick', *nuya' achi'* 'she gives you a kiss', *nuya' jun aqetenik* 'she gives you a hug', and *nuya' ruqutun* 'she gives his food'. The second most common verb that was used to replace other verbs was *-elesaj* 'to take off/out', which replaced several cutting and washing verbs; for instance, *nuwelesaj ruxäq* 'she pulls out a tree leaf' and *jun ak'wal nuresaj ri ixk'äq* 'a boy takes out the fingernail'. This pattern of replacing specific verbs with more general ones was common among the children. Hence, the data demonstrated that verb acquisition is a long process and that children as old as 11;00 are still acquiring non-generic verbs; for instance the children were still acquiring verbs that select a specific type of

[5] Only two-year-old Ixyamanik used it in *nikitzuq* 'they feed it'.

NP argument, e.g., *-paxij* 'to break glass or eggs' and *-retz* 'to tear up paper/clothes'. Finally, the data showed that sociolinguistic, semantic and developmental factors were involved in the production of mixed verbs.

Table 3.2 details the results for each child with respect to the total number of verb tokens (84) that they produced with 22 verb stems. It lists the number of tokens and percentages per child and per category, starting from the highest percentages to the lowest ones. The categories are the same as those of table 3.1, except that table 3.2 includes category (V), which indicates that there was no response or the response was *ximestaj* 'I forgot'. Kot was not recorded during the third visit and his total percentage is based on 71 tokens rather than 84. The total results for each child include appropriate verbs (I) and replacements (II). The inappropriate verb category (IV) included those verbs that were supplied in uninflected, imperative and stative forms.

Table 3.2 Total verb tokens for each child

	E_9		S_8		A_9		M_{10}		T_9		B_9		Y_8		K_8	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
I	59	70	55	65	49	58	57	68	42	50	43	51	38	45	22	18
II	19	23	18	21	21	25	12	14	18	21	15	18	3	4	6	18
III	-		2	2	1	1	-		21	25	10	12	21	25	33	18
IV	6	8	9	11	13	15	15	18	3	4	16	19	21	25	10	14
V	-		-		-		-		-		-		1	1	13	14
TTL	78	93	73	87	70	83	69	82	60	71	58	69	41	49	28	37

The total results listed on table 3.2 differ from table 3.1 in that, except for Yaxum and Kot, the children

scored higher percentages, i.e., 75 percent of the group scored above the 90th percentile. Ervin produced the most tokens (93% of the time) and Kot produced the least tokens (39% of the time). All the children used other verbs instead of the expected ones (category II) and María Angélica produced the most replacements (25% of the time) and Yaxum produced the least (3% of the time). Kot produced the most mixed verb forms (33% of the time); Ervin and María Angélica produced none. All the children produced the inappropriate argument structure or the verbs *-tz'maj* 'to kiss' and *-tzüq* 'to feed' and all replaced them with the ditransitive verb *-ya'* 'to give'. However, Yaxum produced the most verb stems with the inappropriate argument structure (25% of the time) and Tojil produced the least (3% of the time).

In conclusion, knowledge and production of verbs varied across the eight bilingual children, but generally the majority of the group (75%) knew the transitive verbs that were tested. The variation of verb production showed to be due to the developmental factors, i.e., the children were still in process of acquiring specific verb roots and stems, as well as sociolinguistic factors. The ethnicity of the people represented in the drawings, as well as my ethnicity as one of the interviewers was an important factor in determining the children's motivation to substitute verbs or to use mixed verb forms. Also, the child's direct experience with an event influenced her/his choice of verbs. Finally, lexico-semantic considerations caused the children to use mixed verb forms. In other words, negotiation between two systems took place in order to provide semantically the most

accurate description of an event, regardless of the ethnicity of the people involved.

3.3.0 Verb Morphology

In the previous section, I discussed verb roots and stems and proposed pragmatic, semantic and morphosyntactic criteria to distinguish between the acceptable and non-acceptable verbs that the children provided. In this section, I examine the morphophonological realization of the Kaqchikel inflectional system in the internal structure of the transitive verb. I discuss morphosyntax only when it is relevant to the discussion of verb inflection. I examine the inflectional paradigms provided by the children from a syntax free perspective. In other words, I do not examine the syntactic representation of every constituent in the sentences provided by the children. In this section, I excluded intransitive and ditransitive verbs, but included mixed and pragmatically odd verbs to analyze all the inflectional prefixes that the children produced. I also included verbs that were part of indirect input, i.e., these verbs were introduced as part of the instructions given to the children.

I analyze 86 inflected verbs for each child, which are a total of 688 inflected verbs with ergative and absolutive affixes. These verbs are listed along with the sentences in which they occurred in appendix F and the drawings that were used to elicit some of the inflected verbs are grouped in appendix H. In what follows, I present a detailed analysis and discussion of

the Kaqchikel ergative and absolutive systems for each grammatical person.

3.3.1 Acquisition of the Ergative Case System

As it was indicated in section 3.1.3, the Kaqchikel ergative system, known as set 'A' among Mayanists, inflects a transitive or ditransitive verb to agree with the subject. I follow Dixon (1994), who has labeled the subject of transitive verbs in ergative-absolutive languages as *A* to differentiate it from the subject of transitive verbs in nominative-accusative languages. Besides cross-referencing *A* in the verb, the Kaqchikel ergative system also marks the indirect object (patient or benefactor) of a ditransitive verb, as well as genitive case on nouns. In this section, I present the results concerning the children's acquisition of the ergative system. The data that was elicited and analyzed consisted of 669 inflected verbs that the children produced. The children's results are listed on table 3.3. The top row is rank listed according to age, starting with the youngest child and the left column is organized according to each of the six grammatical persons. The children's age is indicated in all of this chapter's tables with the appropriate indexed number.

Table 3.3 Total percentages in ergative case

	No. tokens	K_8 %	Y_8 %	S_8 %	A_9 %	E_9 %	T_9 %	B_9 %	M_{10} %
1SG	16	66	31	87	100	87	87	75	94
2SG	11	86	73	90	100	82	90	100	100
3SG	36	25	69	72	83	83	67	72	86
1PL	4	Ø	0	100	100	100	0	100	100
2PL	13	0	23	100	100	92	69	85	92
3PL	7	100	0	71	86	71	29	42	86
TTL	87	55	33	87	95	86	66	79	93

Kot's percentages were based on the 60 tokens that he produced during the first and second visits, while the percentages for the rest of the children are based on 87 tokens. The total average results group the children into three groups. The first group, whose average was below 60 percent, consists of Kot, Yaxum and Tojil. This was the least successful group; it will become evident that these children had problems producing ergative prefixes. I will argue that they showed signs of having reached a plateau in their knowledge of verbal inflection, and, perhaps, a certain level of attrition as well.

The second group's average was above 85 percent and this group consists of Säqche' (87%), Ervin (86%) and Ixb'alam (82%). The third group, which consisted of María Angélica and Ixmukane, was the most successful since its average was above the 90th percentile. These last two groups demonstrated that they knew the ergative paradigm. However, a generalization cannot be made about these two groups' knowledge and productivity of ergative

case based on their ages. The ages of those who scored the highest averages were between 8;00 and 10;10. While, the ages of those who scored in the 85 percent ranged between 8;00 and 9;00. In comparison, the ages of those who got the lowest averages were between 8;00 and 9;00. There was an age overlap since both the eight and nine year old children scored both high and low percentages.

Säqche', one of the eight year old children, got the highest average (87%) of his group and Yaxum, another eight year old, got the lowest average (33%) of his group. Moreover, of the nine-year-old children, María Angélica scored the highest percentage (95%) of her age group and of the entire group. In contrast, nine-year-old Tojil scored one of the lowest averages (66%). Thus, age was obviously not the only factor that determined the children's levels of knowledge and productivity of the inflection of ergative case in Kaqchikel transitive verbs. In what follows, I discuss and analyze in detail the children's acquisition of the Kaqchikel ergative paradigm in their correct, omitted and incorrect forms.

3.3.1.1 Grammatical Use of Ergative Case Morphology

The children as a group showed that they had consolidated their knowledge of some prefixes, but not others. For instance, table 3.3 shows that the group had better knowledge and was more productive with the ERG1sg prefix than with its plural counterpart. The group's average for the ERG1sg prefix was 85 percent and for the ERG1pl prefix was 62 percent. The singular and plural forms have both preconsonantal and prevocalic allomorphs; however, in this study only the preconsonantal allomorphs

were elicited. Even if the group's average for the production of the 16 tokens of the preconsonantal ERG1sg *in-* allomorph was among the highest averages, sixty-two percent of the group inflected incorrectly the prefix *i-*. These children seemed to confuse, or, perhaps converge by analogy the preconsonantal ergative and absolutive prefixes for the first person singular.

Kot and Yaxum got the lowest percentages at producing the ERG1sg *in-* allomorph. Of these two children, Yaxum demonstrated to have the weakest knowledge of this prefix. Nevertheless, the majority of the children knew the ERG1sg prefix *in-*, despite the problems that Kot and Yaxum had, and despite the group's seeming confusion regarding the preconsonantal ERG1sg and ABS1sg prefixes. In contrast, the children did not show as much confusion in the inflection of the preconsonantal ERG1pl *qa-* prefix. Seventy-five percent of the children produced the four tokens that were elicited of this prefix. In contrast, Yaxum and Tojil (25% of the group) did not produce any of the tokens for this prefix, showing no knowledge of the ERG1pl *qa-* prefix.

The group as a whole showed more productivity with the ERG2sg prefix than with any other prefix in the ergative case paradigm. Both prevocalic and preconsonantal allomorphs were elicited for the ergative second singular and plural persons (see (8)). The group's average percentage on the inflection of the ERG2sg allomorphs was 95 percent and for ERG2pl allomorphs was 59 percent. Generally, those children with lower percentages had problems producing the prevocalic allomorphs for both persons, omitted the

required allomorph, or used the incorrect allomorph. In addition, of the group, Kot and Yaxum had the most problems at producing the ERG2pl prefix.

The children were more productive with the ERG3sg prefix than with its plural counterpart. Both prevocalic and preconsonantal allomorphs were elicited for the ergative third singular and plural persons (see (8)). The group's averages were 71 percent for the ERG3sg prefix and 61 percent for the ERG3pl prefix. Kot, Yaxum and Tojil had the most problems producing these prefixes, other children omitted the required prefix. The group in general had problems using the correct allomorph, especially the ERG3sg *r-*, *ru-* and *u-* allomorphs. Moreover, the low averages were also due to some children producing intransitive and ditransitive verb forms. Finally, other morphophonological patterns were also present, such as syllable deletion, vowel lowering and epenthesis.

3.3.1.2 Omissions of the Ergative Prefixes

In this section, I present the results concerning the children's omissions in the inflection of the ergative paradigm. The omission of ergative inflection basically excludes information about the subject or the agent of the action, although in most cases the verb phrases without inflection were pragmatically interpretable. Nevertheless, these were considered as incorrect. Table 3.4 details the results and it is organized in the same manner as table 3.3.

(23) a. Kot: *Nb'än lavar ri nupalän.*
I wash my face.

b. Säqche': *Nch'äj ventana.*
I wash the window.

c. Ervin: *Nch'äj pa nuchi'.*
I wash my mouth.

d. Ixb'alam: *K'a ri nb'än recibir ri tijobäl.*
I receive it at school.

These examples show that four children inflected the incompletive aspect marker *n-* and the ABS3sg prefix indicated by the aspect marker, but did not inflect the preconsonantal ERG1sg *in-* prefix. Both Säqche' and Ervin inflected the Kaqchikel verb stem *-ch'äj* 'to wash', though Säqche' used the Spanish loanword ventana[6] 'window'.

In comparison, Kot and Ixb'alam produced mixed verbs; they mixed the auxiliary *-b'än* with the Spanish verbs *lavar* 'to wash' and *recibir* 'to receive'. This verb mixing may be partially explained by taking into account the context of the activities that were described. For example, Ixb'alam described her daily activities at school, which is the domain of the Spanish language; hence, her mixing verbs from L1 and L2 were pragmatically motivated. Kot's use of *nb'än lavar* 'to wash' cannot be explained on the same grounds since the context of the activities was the home and the agent was Kot, who is a Kaqchikel Mayan boy. Thus, his mixing verbs from L1 and L2 cannot be explained on the grounds

[6] In the previous chapter *ventana* was considered as a loanword, i.e., these lexeme had achieved a certain level of acceptance among the three generations that participated in my lexical study.

of a Spanish dominant context, though it can be explained on the grounds of lexical gaps, i.e., he did not know the Kaqchikel verb *-ch'äj*.

Regarding omissions of the preconsonantal ERG2sg *-a* prefix, table 3.4 shows that Yaxum and Tojil were the children who omitted it, although of these two children, Yaxum made the most omissions. The examples that follow show the omissions produced by both children. In (24), Tojil inflected the ABS1pl prefix *oj-*, but omitted the preconsonantal ergative prefix *a-*. That is, he did not indicate who was the subject/agent of the action.

(24) ***Xojq'etej chok ka'i'**.

X - oj - Ø - q'etej chok ka'i'
COMPL ABS1pl ERG2sg hug to us two
-- hugged us two.

(cf. adult form: *xojaq'etej* 'You hugged us').

Interestingly, Tojil emphasized the direct object/patient with the phrase *chok ka'i'* which in adult form is *choj ka'i'* and means 'to us two'. Phonologically, he replaced the alveopalatal fricative with a velar consonant. Yaxum's difficulty at inflecting ergative prefixes on the verb stem increased through time. During the second visit, Yaxum was much more reluctant and slow at responding to María Florencia's instructions and questions. For instance, after she tore up a piece of paper and asked him to describe what she just had done, Yaxum responded with the following verb phrase:

(25) *Xa, xa, xëtz' etz'äj ri wuj.*

x - a x - a x - ëtz' etz'äj ri wuj

COMPL ABS2sg COMPL ABS2sg COMPL tear tear the paper

(cf. adult Kaqchikel: *xarëtz' ri wuj* 'You tore up the paper').

In the first two attempts, Yaxum marked completive aspect and the ergative prefix *-a* in *xa*, but in his third attempt he marked only completive aspect on the verb and dropped the initial consonant [r]. It was clear at the time of the recording that Yaxum did not know the verb stem well enough to inflect it and in his confusion, he dropped the ERG2sg prefix *-a* during his last attempt at inflecting the verb. Thus, the example in (25) provides evidence of the effects that the lack of verb stem knowledge has on the production of verb inflections.

Turning to the ERG1pl *qa-* prefix, Yaxum and Kot were the only children who omitted it or misused other ergative prefix; thus, showed no knowledge of the preconsonantal prefix *qa-*. It is important to note that the examples in (26) were recorded during the third visit, which shows that the children, although they were older, they had not yet acquired this ergative prefix:

(26) a. **Ri che' xq'aj.*

Ri che' x - 0 - 0 - q'aj

the tree COMPL ABS3sg ERG3sg break

The tree broke.

b. **--jik iwi', rat.*

0 - 0 - 0 - jik i-wi' rat

COMPL ABS3sg ERG1pl comb your-hair you

--comb your (pl.) hair , you (sg.)

In (26a), Yaxum inflected the verb with the completive aspect marker *x-*, but did not inflect the ERG1pl *qa-* prefix (cf. adult Kaqchikel: *xqaq'äj ri che'* meaning 'we broke the tree branch'). Tojil in (26b) failed to inflect *qa-* on the verb *-jik* 'comb' (cf. adult Kaqchikel: *xqajik qawi'* meaning 'we combed our hair'). Tojil inflected the noun for hair *wi'* with the erroneous ERG2pl *i-* prefix and adjoined the pronoun *rat* 'you' rather than its plural counterpart *rix* 'you (pl.)'. I suggest that some changes were occurring in the inflectional systems of these boys that were not related to language development, but were possibly related to language attrition.

Yaxum and Tojil omitted the ERG2pl allomorphs, prevocalic *iw-* and preconsonantal *i-*. Yaxum omitted them 23 percent of the time and Tojil 8 percent of the time. The examples in (27) show these boys' lack of knowledge of these allomorphs:

(27) a. *Nchöp ri nujolon ri ka'i'.*

N - Ø - Ø - chöp ri nu - jolon
INCOMPL ABS3sg ERG3sg touch the my - head
ri ka'i'
the two
You (pl.) touch my head the two (of you).

b. *Njïk nuwi'.*

N - Ø - Ø - jik nu - wi'
INCOMPL ABS3sg ERG3sg comb my - head
-- comb my hair.

Compare the example in (27a) with the adult form: *nichöp nujolon* 'You (pl.) touch my head' and note that Yaxum did not inflect the preconsonantal ERG2pl prefix *i-* on the

verb *-chöp* 'to touch', although he marked the noun with the appropriate genitive case. I suggest that he tried to compensate for his lack of inflection on the verb by introducing the phrase *ri ka'i'* which means *the two (of you)*. In (27b) Tojil did not inflect the preconsonantal prefix *i-* either (cf. adult Kaqchikel form: *xijik nuwi'* 'you (pl.) combed my hair'), but he marked *wi'* ('hair') with the appropriate genitive case. Thus, Yaxum and Tojil showed that they had problems at inflecting the ERG2pl allomorphs.

Tojil was the only child who omitted the prevocalic ERG3pl *k-* allomorph and it only occurred in the following example:

(28) *Ri ka'i' nana natinisaj che ri ka'i' ala'.*

Ri ka'i' nana n - Ø - 0 - atinisaj
the two mothers INCOMPL ABS3sg ERG3sg bathe
che ri ka'i' ala'
to the two sons
The mothers bathe to the two sons.

Tojil inflected the incompletive prefix *n-*, but did not inflect the ERG3pl allomorphs *k-* and *ki-*. Compare (28) the adult Kaqchikel form *la ixoqi yekatinisaj la ka'i' kal* 'the women bathe their two sons', in which *yekatinisaj* 'bathe their two sons' is inflected with the prevocalic ERG3pl prefix *k-*. I also suggest that Tojil attempted to compensate his lack of inflection on the verb with the phrase *che ri ka'i' ala'* which means 'to the two sons'.

3.3.1.3 Incorrect Use of the Ergative Case Prefixes

This section deals with the children's incorrect use of ergative case allomorphs. The results for each child are listed on table 3.5, which is organized as the previous tables. In general, the children as a group made errors in choosing the ergative prefix for the correct grammatical person or they made errors in choosing the appropriate ergative allomorph. Both of these types of errors are discussed in detail in this section.

Table 3.5 Total percentages in ergative case errors

	No. tokens	K_8 %	Y_8 %	S_8 %	A_9 %	E_9 %	T_9 %	B_9 %	M_{10} %
1SG	16								
i-		-	25	-	-	-	6	6	6
*		-	25	-	-	-	6	-	-
2SG	11	14	18	9	-	18	-	-	-
3SG	36	69	31	22	11	14	28	28	17
1PL	4	-	50	-	-	-	75	-	-
2PL	13	100	54	-	-	7	23	15	7
3PL	7	-	100	29	-	29	57	43	14
TTL	87	30	52	22	3	12	35	15	7

The group made errors in the inflection of ergative case in five of the six grammatical persons. These grammatical persons include the ERG3sg, ERG2pl, ERG3pl, ERG1sg and ERG2sg prefixes. The ERG3sg allomorphs was the most difficult to inflect because all the children made errors at inflecting them. The ERG2pl and ERG3pl allomorphs were difficult to inflect as well since 75

percent of the group made errors with their inflection. Following were the ERG1sg and ERG2sg allomorphs only 62 percent of the group made errors with their inflection. In contrast to these five grammatical persons, the ERG1pl allomorphs were the best known by the children, since only 25 percent of the group made errors at inflecting them.

The results suggest that the children were at different levels of knowledge of the ergative case prefixes. Kot, Yaxum and Tojil, who made many errors (an average of 38% of the total tokens), represented the lowest level. However, of these three children, Yaxum showed to have the weakest knowledge of the ergative case paradigm. Children like Säqche', Ervin and Ixb'alam had better knowledge of the ergative case paradigm for they made less errors, i.e., an average of 16 percent of the total tokens. In contrast, María Angélica and Ixmukane showed strong knowledge of this paradigm by making an average of five percent in errors. In what follows, I discuss and analyze the most prominent examples of incorrect ergative case inflection.

Turning to the nonstandard preconsonantal ERG1sg prefix *in-*, it was surprising that 62 percent of the group inflected the prefix *i-* rather than the expected ERG1sg *in*-prefix. Of this group Yaxum produced the prefix *i-* 25 percent of the time; he produced it more often that any other child. Yaxum along with Säqche', Tojil, Ixb'alam and Ixmukane replaced the prefix *-in* with *i-* and I suggest that they had, perhaps, replaced it by analogy with the ABS1sg *i-* prefix, which according to García and Rodríguez (1997) is a variant of the Tecpán

region. This variant only occurs with intransitive and transitive verbs whose subject/agent is cross-referenced with the ERG3sg *r-* and *ru-* allomorphs. The children's simplification of the ergative-absolutive 1st person singular allomorphs is illustrated as follows:

(29) First Person Singular

		___C	___V
Ergative	in -->	i-	inw-
Absolutive		i-	in-

I suggest that these children started simplifying the ergative first person paradigm and re-analyzing *i-* as being both an ergative and an absolutive prefix. The deletion of the consonant [n] through analogical change results in only one identical preconsonantal prefix for both cases, but the prevocalic prefixes would remain distinct.

The loss of distinction between the preconsonantal ergative and absolutive 1sg prefixes results in semantic ambiguity and this loss of distinction is aggravated by the ERG2pl *i-* prefix. In (30), the examples with *i-* were ambiguous, but their context made it clear that these children were talking about themselves. Moreover, some of the children alternated the use of *in-* and *i-* with the same verb, while others did not.

(30)

Ixb'alam:	*Xijik wi'.*	I combed hair.
	Xinjik ruwi'.	I combed your hair.
Tojil:	*Xintzu' rija.*	I saw her.
	Xib'än poner ruchi'.	I put on his mouth.
Yaxum:	*Xitzu' ri Ixtijax.*	I saw Ixtijax.
	Xitzu' ri ka'i'.	I saw the two.
Säqche':	*Nib'än utzil ri ch'at.*	I tidy up the chair.
Ixmukane:	*Nib'än rutzil ri nuch'at.*	I tidy up the chair.

Note that Ixb'alam and Tojil alternated the use of both *in-* and *i-* prefixes. Ixb'alam inflected *in-* and *i-* to the same verb *-jik* 'to comb' in two different occasions; however, she did not mark the noun *wi'* ('hair') with its obligatory genitive case marker *nu-* 'my'. Tojil alternated the use of these prefixes with two different verbs, *-tzu'* 'to see' and *-b'än* 'to do'. He also mixed *-b'än* with the Spanish verb *poner* 'to put on'.

In (30), Yaxum, Säqche' and Ixmukane used only the *i-* prefix. Yaxum used it with the same verb *-tzu'* in two different occasions. Säqche' and Ixmukane used *i-* with the complex verb *-b'än rutzil* 'to fix'. It is important to note that Säqche' confused the use of *utzil* and *rutzil*. The first occurs in phrases such as *tabana' utzil* 'do me a favor' and the second is part of the complex verb *-b'än rutzil* 'to fix/tidy up'. An interesting aspect of the examples in (30) is that the children who produced the prefix *-i* rather than *-in* are cousins. In contrast, Ervin and María Angélica who are not related to anyone in the group only produced the expected ERG1sg *in-* prefix. Finally, the examples in (30) strongly suggest that these children were

simplifying the preconsonantal ERG1sg prefix *-in* by analogy with its absolutive counterpart.

Table 3.5 indicates that Yaxum and Tojil were the only children who inflected other ergative prefixes rather than inflecting the ERG1sg *in-* prefix. In the case of Yaxum, he misused the ERG3sg prefix *-u* 40 percent of the time. The data for this prefix consisted of Kaqchikel verbs and mixed verb forms and the latter occurred specially with his narration of his daily activities.

(31) a. *Xuq'äj ri che'.*

x - Ø - u - q'äj ri che'

COMPL ABS3sg ERG3sg brake the tree

She broke the stick.

(cf. Adult Kaqchikel: *xinq'äj.*)

b. Nub'än lustrar nuzapato.

n - Ø - u - b'än lustrar

INCOMPL ABS3sg ERG3sg do Spa-to polish

nu - zapato

my Spa-shoe

She polishes my shoe.

In both (31a-b) Yaxum's intended meaning was: 'I broke the stick' and 'I polish my shoe'. Yaxum mixed the Kaqchikel verb *-b'än* plus the Spanish infinitive form of the verb *lustrar* 'to polish' and also used the Spanish noun *zapato* 'shoe', which interestingly was marked with the Kaqchikel possessive prefix *nu-* 'my'. The use of the Spanish verb *lustrar* can be explained as a lexical gap in Kaqchikel. That is, Kaqchikel does not have a verb to describe the activity of polishing shoes; hence, he used the Spanish verb that describes the activity. Yaxum's

substitution of the ERG1sg *in-* prefix with the ERG3sg *-u* prefix may be explained either in relation to language loss or as the incomplete acquisition. During the second visit, I was able to observe that his mother corrected him and instructed him to use this grammatical person correctly. Months later, during the third visit, he produced the ERG1sg *in-* inconsistently; he omitted it, or replaced it with *i-*.

Turning to the case of Tojil, he, rather than misusing the ERG3sg *-u* prefix, he misused the preconsonantal ERG2sg prefix *a-* 6 percent of the time. The example in (32) shows that Tojil produced erroneously inflected *a-* rather than the ERG1sg prefix -in, resulting in a sentence that described something that did not happen. He had been instructed to comb María Florencia's hair and was asked to describe what he did. Tojil was expected to inflect the ERG1sg *in-* allomorph and respond with the form *xinjik awi'* which means 'I combed your hair'. However, he described instead María Florencia combing her own hair.

(32) *Xajiqa'*[7] *awi'*.

x	-	Ø	-	a	-	jiqa'	a	-	wi'
COMPL		ABS3sg		ERG2sg		comb	ERG2sg		hair

You combed your hair.

I suggest that Tojil partly and simply rote-imitated the command given to him by María Florencia, *tajika' nuwi'* which means 'comb my hair' and he provided the imperative form with the wrong aspect, but most importantly, he

[7] The imperative mood for this verb consists of the prefix *t-* and the suffix *-a'*. Tojil changed the verb's final consonant, i.e., the velar stop for the uvular stop in the syllable *ka'*.

produced the wrong ergative prefix, and, thus, he showed to have problems with the inflection of the ERG1sg *in-* allomorph.

With regards to the ERG2sg allomorphs, the group as whole showed few errors with this grammatical person. However, half of the group produced an error average of 12 percent. These children produced errors that ranged from either selecting the wrong allomorph or the wrong person prefix. They also produced phenomena such as metathesis and epenthesis. All the children produced the two tokens for the prevocalic ERG2sg allomorph *aw-*, except Ervin who did not produce it at all (18% of the time). The following example mainly concerns the selection of the inappropriate allomorph:

(33) *Rat xalesaj.*

Rat	x	-	Ø	-	a	-	(e)lesaj
You	COMPL		ABS3sg		ERG2sg		take off

You take it out.

Ervin, in (33) produced the preconsonantal ERG2sg prefix *a-* rather than the prevocalic prefix *aw-*. Also, note that he did not produce an overt direct object (cf. adult form *xawelesaj nukoton* 'you take off your sweater'). I suggest that in order to avoid two adjacent vowels (*a + e)*, Ervin dropped the initial vowel of the verb stem *-elesaj* 'to take off/out'.

In another instance, Ervin also deleted the fist syllable of the verb stem and produced the ERG3sg allomorph *r-* rather than *aw-* in *tajin relesaj asuéter* 'she is taking your sweater off you' rather than the adult *xawelesaj akoton* 'you took off your sweater'. Only Ervin produced errors in the selection of the appropriate

allomorph for second person singular, while Säqche' misused the ERG3sg *u-* prefix, and Kot and Yaxum metathesized the prefixes. The results show that in general the group was more productive with the ERG2sg allomorphs than with the preconsonantal ERG1sg prefix.

With respect to the ERG3sg allomorphs, it was found that these allomorphs caused problems to the group as a whole and all of the children produced errors with this grammatical person. It was indicated in section 3.1.3 that the ERG3sg paradigm has the preconsonantal allomorphs *ru-* and *u-*, which have different distributional constraints. The *ru-* allomorph occurs with any absolutive prefix, while the preconsonantal ERG3sg *u-* prefix may be inflected only with the ABS3sg null prefix. In contrast, the third ERG3sg prefix, which is the prevocalic *r-* prefix may be inflected with all the absolutive grammatical persons.

Table 3.6 details the error percentage for each child in each of the three ERG3sg allomorphs. The group's error average at inflecting the ERG3sg allomorphs was 27 percent, which was the second highest error percentage for the group. The whole group made errors with the inflection of *ru-* and *r-*, although the group did worse at producing prevocalic *r-* than at producing the preconsonantal *ru-* and *u-* allomorphs. The average error percentage for *r-* was 83 percent and for *ru-* was 68 percent. Thus, the children produced fewer errors with the preconsonantal ERG3sg *u-* prefix and only two children, Säqche' and Ervin, did not make errors at inflecting the *u-* prefix. I suggest that the children's errors and problems may be explained in terms of

acquisition. That is, generally the children as a group were still acquiring the rules for the *ru-*, *r-* and *u-* allomorphs.

Table 3.6 Total percentages in ERG3sg allomorph errors

	Tokens	K_8	Y_8	S_8	A_9	E_9	T_9	B_9	M_{10}
u-	26	85	4	-	4	-	8	4	8
ru-	7	29	100	86	43	29	100	86	71
r-	3	33	100	100	66	100	100	100	66

Regarding the inflection of *u-*, an interesting pattern emerged in the verb inflections of Kot. He inflected the ERG3sg allomorph *ru-* instead of the allomorph *u-* 85 percent of the time. Kot had made a generalization about the inflection of the prefix *ru-*. That is, he inflected it regardless of the type of absolutive prefix that was affixed in the verb. While Kot inflected the incorrect allomorph, 37 percent of the group inflected a prefix other than the expected ERG3sg allomorphs. Moreover, 25 percent of the group provided an intransitive verb or a participial verb form. The examples in (34) show one example of the generalization of the *ru-* allomorph in verbal forms that required the preconsonantal *u-* allomorph instead, while the other example shows the inflection of the wrong prefix.

(34) a. **Nrutorij ri tz'i'.*

n - Ø - ru - torij ri tz'i'

INCOMPL ABS3sg ERG3sg push the dog

He pushes the dog.

b. **Nachop nujolon.*

n - Ø - a - chop nu - jolon

INCOMPL ABS3sg ERG3sg touch my head

You touch my head.

In (34a), Kot's inflection of *ru-* implies that the direct object, marked in absolutive case, should be other than the ABS3sg null prefix. However, the ABS3sg null prefix calls for the ERG3sg allomorph *u-* and not *ru-* (cf. the same sentence *he pushes the dog* in adult Kaqchikel *nutorij ri tz'i'* in which *u-* is inflected). In comparison, Tojil did not make an allomorphic generalization in (34b), but he misused the ERG2sg preconsonantal prefix *a-* and did not use the expected ERG3sg prefix *u-* as in the adult Kaqchikel form *nuchöp ri tz'i'* that means 'he pets the dog'. Hence, Tojil inflected the incorrect ergative prefix, while Kot generalized the use of the ERG3sg *-ru* prefix.

Interestingly, the whole group made errors at producing the ERG3sg *ru-* allomorph, which was required in combination with the ABS2sg *a-* and ABS3pl *e-* prefixes. One of the examples in (35) shows how Kot had generalized the application of *-ru* without regard of the type of absolutive prefix present. The other example shows how the absolutive prefix chosen affected the choice of the ergative prefix and ultimately the accuracy of the verb's ergative and absolutive inflection:

(35) *Yerunim* -> **Jin nrub'än empujar.* Kot
He pushes them. 'He is pushing it'
**Nunim.* Ixmukane
'He is pushing it'

In (35), Kot produced an uninflected progressive form with a mixed verb and provided *ru-* without the absolutive prefix *e-*. His inflected form is ungrammatical since *ru-* requires an absolutive prefix that is not the ABS3sg null prefix. It is not certain that Kot had acquired the inflectional constraints that govern the use of ERG3sg *ru-* allomorph. By contrast, Ixmukane did not provide neither the required *ru-* prefix, nor the absolutive prefix *e-*. Her inflected verb is grammatical since *u-* may only be inflected with the ABS3sg null prefix. However, this inflected verb was not pragmatically acceptable because it did not describe accurately the number of patients or direct objects represented in the drawing. Ixmukane chose the incorrect absolutive prefix[8], and, hence, affected her choice of the correct ergative prefix.

Most children (62%) failed at producing the prevocalic ERG3sg prefix *r-* in the inflection of the two vowel initial verb stems, *-atinsaj* 'to bathe' and *-elesaj* 'to take off/out'. They produced the *u-* prefix instead and in most cases the children epenthesized the bilabial glide [w] to separate the vowels from the verb stem and the ergative allomorph. These structures are also interesting because Kaqchikel has no diphthongs; thus, two adjacent vowels are generally separated by a glottal

[8] This prefix *-e* appeared to be optional for must of the children.

stop. I provide in (36) an example of the vowel initial verb stem *-elesaj* 'to take off/out', in which 75 percent of the children epenthesized [w] rather than producing a glottal stop:

(36) u - elesaj a-koton -> u - w - elesaj
ERG3s take off your sweater

The resulting inflected form for these children was *nuwelesaj/xuwelesaj akoton* 'she takes off/took off your sweater of you' rather than the adult Kaqchikel form *xrelesaj akoton* 'she took your sweater off you'. I suggest that perhaps, another explanation for this phenomenon is that the children inserted [w] by analogy with the affix *aw-* as in *xawelesaj* 'you took it off'.

Of the group, María Angélica, Ixmukane and Kot used the expected allomorph *r-* to inflect the vowel initial verbs that require it. However, they did not inflect *r-* consistently or without problems; for instance Ixmukane and Kot had some problems with the verb *-atinsaj* 'to bathe'. In (37a), Kot used the intransitive verb root *-atin* 'to bathe' as if it were a transitive verb rather than using the derived transitive verb *-atinsaj*. In comparison, Ixmukane produced the appropriate verb stem, but inflected both the preconsonantal *u-* and prevocalic *r-* ERG3sg allomorphs in (37b). Moreover, she did not inflect the ABS3sg *e-* prefix, even though the direct object that she produced was plural and it consisted of two patients, *ri ixtän y ri ak'wal* 'the girl and boy'.

(37) a. *Yeratin pa jun tuj.*

Y - e - r - atin

INCOMPL ABS3pl ERG3sg bathe

pa jun tuj.

in a Mayan bath

She bathes them in a Mayan bath.

b. *Ti ixöq nuratinsaj ri ixtän y ri ak'wal.*

Ti ixöq n - u - r - atinsaj

the woman INCOMPL ERG3sg ERG3sg bathes

ri ixtän y ri ak'wal

the girl Spa-and the boy

The woman bathes the girl and the boy.

In sum, the children had more problems producing the ERG3sg prevocalic allomorph *r-* than the preconsonantal *ru-*. Sixty-two percent of the group had not acquired the *r-* allomorph and used instead the *u-* allomorph. However, they knew that the morphophonology of Kaqchikel does not allow two adjacent vowels. In order to avoid violating the rule, they epenthesized the bilabial glide [w] between the two vowels, *u + e* in *-elesaj*, or *u + a* in *-atinsaj*. On the other hand, 37 percent of the group did not produce the allomorph *ru-*, but it is not clear that they did not know it, since they did not select the ABS3pl *e-* and ABS2sg *a-* prefixes. In fact, the children's problem was the inflection of this prefix, i.e., the inflection of the ERG3sg allomorph *ru-*, which is determined by the selection of any absolutive prefix, except for the ABS3sg null prefix. Finally, Kot did not know the *u-* allomorph, while the rest of the group (87%) knew it. This allomorph was the most productive for the group in general.

Turning to the ERG1pl *qa-* prefix, seventy percent[9] of the children produced this prefix in all the required contexts (see table 3.3). Yaxum and Tojil were the children who did not inflect any of the tokens of this prefix; Yaxum produced it 50 percent of the time and Tojil 25 percent of the time. The lack of knowledge of this prefix by these children may perhaps be considered a symptom of attrition. Their errors consisted in replacement of the ERG1pl *qa-* with the prefix *oj-*, its absolutive counterpart:

(38) a. **Xojch'ol ri saq'ul.*

Y - Ø - oj - ch'ol ri saq'ul
INCOMPL ABS3sg ABS1pl nourish the banana
Us peeled the banana.
(Cf. adult Kaqchikel: *xqach'ol ri saq'ul* 'we peeled the banana'.)

b. **Xojtzatza' ri qawuj.*

X - Ø - oj - tzatza' ri qa - wuj
COMPL ABS3sg ABS1pl tear up the our paper
Us tored up our paper.
(Cf. adult Kaqchikel: *xqarëtz la ruxaq wuj* 'we tored up the paper'.)

Both Yaxum (38a) and Tojil (38b) confused and inflected *-oj* the absolutive counterpart of the expected ERG1pl *qa-* prefix. Interestingly, Tojil, in (38b), was able to inflect *qa-* on the noun *wuj* 'paper' and marked it with genitive case as *qawuj* 'our paper'. In addition, Tojil produced erroneously an imperative verb form by suffixing

[9] Kot was absent during the recording of these structures.

-a' to the verb. This was probably his rote-imitation of the verb form that he heard as part of the instruction given to him. I suggest that the misuse of the ABS1pl *oj-* prefix can only be explained in terms of language loss, i.e., the children were loosing their knowledge of the ergative case system as an inflectional system on the verb. Moreover, I suggest that language loss may occur in stages; the inflection of ergative case as it cross-references the subject is lost first and its use, as a genitive marker is lost later. This can be observed in (38b) were *qa-* was not inflected on the verb but was inflected on the noun.

In addition, a morphophonological phenomenon occurred with the inflection of ERG1pl *qa-* prefix. Ixmukane, during the third visit, modified the quality of the consonant in her production of this ergative prefix as follows:

(39) Xqach'ol -> xkach'ol

The uvular stop became a velar stop in 75 percent of the verb forms that she produced. This is an interesting morphophonological change because during the second visit she produced the uvular stop without difficulty when she and the other children were given a task, which consisted on the imitation of Kaqchikel phonemes that occurred in word initial, mid-word and word final position. Thus, there were some changes taking place, perhaps influenced by Spanish, in her Kaqchikel phonological system that affected her production of the ERG1pl *qa-* prefix.

Regarding the ERG2pl preconsonanatal *i-* and prevocalic *iw-* allomorphs, 75 percent of the children produced errors at inflecting them. Their errors

involved mostly the use of the ERG2sg *a-* prefix, the ABS2pl *ix-* prefix and the ERG3sg *u-* prefix. The scores in table 3.5 show that of the group, Kot, Yaxum and Tojil scored the highest error percentages. In what follows, I illustrate some of the errors produced by these three children. In (40), Kot produced either *kiw-* or *ki-* rather than the ERG2pl prevocalic *iw-* and preconsonantal *i-* allomorphs. He seemed to have analyzed *kiw-* and *iw-* as if they were the same prefix:

(40) *?Nkiwelesaj ri koton.*

N	- Ø	- ki	- w	- elesaj
INCOMPL	ABS3sg	ERG3pl	Epen	take off
ri	koton			
the	sweater			

They/you take off the sweater.

The expected inflected form was the adult form *niwelesaj ikoton* 'you (pl.) take off your sweaters', but Kot did not produce it. He was asked, to clarify his response, 'who takes off the sweater?' and he answered with the same inflected verb, but adjoined appropriately the second person plural pronoun *rix* 'you'. Hence, it was clear that he knew that the agents of the action needed to be represented with the second person plural, but his verbal inflection did not show it. It seemed that Kot had assumed that the ERG2pl and ERG3pl prefixes were equivalent. Kot inflected *kiw-* and *ki-* in all of the tokens for this allomorph 100 percent of the time instead of the ERG2pl allomorphs.

I suggest that Kot's sister, Ixb'alam, may indicate a possible explanation for his inflecting the verb

incorrectly. She produced a similar inflected verb form to describe the same event:

(41) *Xkiwelesaj ikoton.*

Xk - Ø - iw - elesaj i - koton
POTEN ABS3sg ERG3sg take off ERG2pl sweater
You will take off your sweaters.

The context of the utterance in (41) called for the use of the incompletive aspect marker *n-* as in the adult form *niwelesaj ikoton* 'you take off your sweaters', but Ixb'alam produced *xk-*, the potential aspect prefix. If Ixb'alam used the potential aspect marker *xk-*, then Kot may have reanalized *xk-* as the *nk-* form that he produced. This is a possibility because Kot and Ixb'alam tended to answer the question before María Florencia asked it. That is, both children, particularly Ixb'alam, anticipated the questions that we, the testers, asked, and, thus, these children used the potential verb form.

Another possible explanation is that Kot's inflected verbs reflect dialectal variation. Patal *et al.* (2000) reported that in two municipalities[10] of the Kaqchikel language region *-nk* and *-k* are used in free variation for all grammatical persons, except *-n* is used for 3sg and *-y* for 3pl. The field-work for this research on dialectal variation took place in 1998 and 1999; thus, it might be possible that the variation in the use of *nk-* and *k-* has spread to the other municipalities so that some children such as Kot have acquired it as a new form. Especially since Kot has lived in other municipalities besides Tecpán. Mercedes (7;3), a monolingual child,

[10] San Pedro Chuarrancho and San Juan Sacatepéquez

produced a verb form with the prefix *k-*, which may be evidence in support of this analysis:

(42) *Kiq'etej iwi'.*

k	-	i	-	q'etej	iw	-	i'
INCOMPL		ERG2pl		hug	ERG2pl		RN

You hug each other.

Interestingly, Mercedes produced exactly the incompletive aspect marker *k-* that has been reported to be one of the two variants of the incompletive aspect paradigm (cf. the Tecpán adult Kaqchikel form *yiq'etej iwi'* for the sentence 'you hug each other'). Thus, Kot's verb forms as exemplified in (40) may be, perhaps, analyzed as inflected with the appropriate ERG2pl prefix *i-*. Nevertheless, since it would be difficult to prove these two possibilities with certainty, Kot's inflections for this grammatical person were considered incorrect.

Returning to the ERG2pl preconsonanatal *i-* and prevocalic *iw-* allomorphs, Yaxum and Tojil had problems inflecting them. They inflected the singular counterpart of ERG2pl *i-* prefix, i.e., they inflected the ERG2sg *a-* prefix. Yaxum produced this prefix 46 percent of the time and Tojil 15 percent of the time. The inflected verbs in (43a-b) exemplify these children's substitution of the ERG2pl *i-* prefix for the ERG2sg *a-* prefix.

(43) a. **Xakusaj ri koton.*

X - Ø - a - kusaj ri koton

COMPL ABS3sg ERG2sg put on the sweater

You (sg.) put on the sweater.

b. **Xaq'etej chuwe ka'i'.*

x - ( ) - a - q'etej

COMPL ABS1sg ERG2sg hug

ch(i) w - e ka'i'

Prep ERG1sg RN two

You (sg.) hugged to me, two.

Yaxum in (43a) produced the ERG2sg prefix *a-* along with the uninflected noun *koton*, which required genitive case marking with *i-* (cf. adult Kaqchikel: *xikusaj ikoton* 'you (pl.) put on your sweaters'). Yaxum also used the ERG3sg *u-* prefix to substitute for the ERG2pl in eight percent of the total tokens that he produced. During my third visit, he produced the ERG2pl prefix with great effort; he stuttered a lot and was slow at responding. In (43b), Tojil also used the ERG2sg *a-* prefix and did not inflect the direct object with the ABS1sg *in-* prefix. However, he cross-referenced the direct object in the prepositional phrase, *chuwe* 'to me'. He used the strategy of adjoining the numeral *ka'i'*, which means 'two', to indicate the plurality of the agents (cf. adult Kaqchikel *xiniq'etej* 'you (pl.) hugged me'). This strategy appears to be a grammatical repair. In other words, Tojil adjoined the numeral after he probably became aware that the *a-* prefix was not the correct prefix. Hence, he indicated the grammatical person with the number *ka'i'*.

Regarding the ERG3pl, table 3.5 shows the error percentages for all the children and 62 percent of the group committed errors. Of the 62 percent, Yaxum, Tojil and Ixb'alam committed the most errors. The children's errors consisted in choosing the incorrect allomorph, or the incorrect person prefix. Half of the group inflected *ki-* rather than *k-* and 37 percent of the group produced the incorrect ERG3sg *u-* allomorph.

Yaxum was the only child who did not produce any tokens for the ERG3pl; he only produced the ERG3sg prefix *u-* allomorph. Ervin and Tojil also inflected *u-* allomorph; and they did so on the first four verb forms that were elicited. A possible explanation for the use of *u-* was that these children, when faced with two simultaneous events, chose to describe one of them (see appendix H). Two drawings were created and presented to the children during the third visit[11] to exclude this possibility. The results for the first drawing divided Ervin and Ixb'alam from Yaxum and Tojil. In (44), the inflected verb forms that these children provided are listed.

(44)	*Nkinïm.*	->	*Nkinïm.*	Ervin
	They push her.		*Nikinïm.*	Ixb'alam
			Nunïm.	Yaxum
			Ninïm.	Tojil

Ervin and Ixb'alam produced the expected adult form, although Ixb'alam epenthesized the high front vowel [i]. Perhaps she did so to ease the articulation of the word initial consonant cluster. Yaxum inflected the ERG3sg *u-*

[11] Kot did not participate during the third visit.

prefix, while Tojil inflected an *i-* prefix. Hence, Tojil and Yaxum did not show that they knew the ERG3pl *ki-* allomorph; however, the results of the second drawing separated Yaxum from the other children.

(45) *Nkitïj ri kichilmol.* -> *Nutij chilmol.*
They eat their soup. She eats soup.

In (45), Yaxum produced again the singular counterpart of the ERG3pl prefix *ki-*. He did not mark genitive case on the direct object *chilmol* 'soup' either. Thus, Ervin and Ixb'alam produced the ERG3pl prefix in the two required contexts, Tojil produced only half of them and Yaxum none. I suggest that the ergative case systems of Yaxum and Tojil were showing signs of attrition regarding the ERG3pl allomorphs. Additionally, the case of Yaxum was the extreme example of verb morphology attrition.

As mentioned earlier, 37 percent of the group inflected the preconsonantal ERG3pl *ki-* allomorph instead of the prevocalic *k-* allomorph. This allomorph was expected to be inflected on the causative verb form *-atinisaj* 'to bathe someone' to resemble the adult form *yekatinisaj* 'they bathed them'. However, these children selected the erroneous allomorph and they also epenthesized [w] to separate the vowels of the verb stem and ergative allomorph. In addition, one child seemed to have used two ergative prefixes. The data regarding this allomorph is summarized below.

(46) *Yekatinisaj.* -> a. *Nkiwatinsaj.*
They bathe them. They bathe it.
b. *Nkiratinsaj.*
They (?) bathe it.

The adult Kaqchikel form, *yekatinisaj*, was produced by none. The closest inflected verb form to the adult one was *nkiwatinsaj* (46a) which was produced by Kot, Säqche' and Ixb'alam (37% of the group). Ixmukane inflected the ergative *ki-* allomorph as well, but she inflected *r-* in (46b) instead of epenthesizing [w]. The inflected *r-* resembles the ERG3sg *r-* prefix; however, the inflected form resulted in ambiguity because it is not clear who is the subject/agent. She apparently inflected ergative case twice, which she had done earlier (see example 38b). Thus, the group's data on the ERG3pl allomorphs patterned in such way that one group of children (75%) knew the prefix, but not its allomorphic constraints, while the other group (25%) did not know the prefix well enough, or did not know it at all.

In conclusion, the group knew best the ergative singular prefixes better than the plural ones. Of the ergative singular prefixes, the children knew the ERG2sg allomorphs best since the group's average was 90 percent. The ERG2sg allomorphs were produced with the most consistency and with fewer omissions and errors. The ERG1sg with a group average of 78 percent followed it. The ERG3sg allomorphs were the most problematic for all the children and the group's average was 70 percent. This pattern repeats itself with the ergative plural prefixes. That is, the best-known ergative plural prefix was the ERG2pl with a group average of 70 percent; this was followed by the ERG1pl prefix. The group's average for the ERG1pl was 62 percent and for the ERG3pl was 60 percent.

The most problematic paradigms for the children were the ERG3sg and ERG3pl allomorphs, and the least problematic were the ERG2sg and ERG2pl allomorphs. The group also showed individual as well as dialectic variation. Half of the group, María Angélica, Ixmukane, Säqche' and Ervin, showed to know well the ergative case paradigm, but of these children, María Angélica and Ixmukane knew the ergative case system best. This group was followed by Ixb'alam who also showed to know this case, although her average percent is low, it can be attributed to her choice of inflecting intransitive and ditransitive verbs in numerous occasions. Tojil and Kot were children who showed weaknesses in their knowledge of the ergative case. Moreover, Tojil inflected more often than Kot the wrong allomorph. Finally, Yaxum, one of the youngest children, showed major weaknesses in his knowledge of the ergative case system since his overall average was 33 percent. As I suggested earlier, Yaxum showed signs of language loss.

3.3.1.4 Morphophonological Phenomena

Some children produced inflectional and verb stem forms that underwent morphophonological changes, such as metathesis, consonant change, and syllable insertion or deletion. I discuss first the changes in the inflectional prefixes and secondly the changes on verb stems.

Yaxum produced inflected verb forms that exhibit metathesis and syllable insertion for the verb *-q'etej* 'to hug'. In the following example the ERG2sg *a-* prefix

was expected to be inflected on the verb stem *-q'etej* 'to hug'.

(47) *Xinaq'etej.* -> *yaqaq'etej, yanqaq'etej*
You hugged me. You hug --. I hug you.

Yaxum produced first *yaqaq'etej* and seconds later he produced *yanqaq'etej* as a correction of the first verb that he inflected. During his first attempt at inflecting the verb, he clearly inflected the ERG2sg form *a-* prefix and inserted the syllable *qa*. In his second attempt, I suggest that Yaxum inflected the ABS1sg *in-* prefix, metathesized it and deleted the vowel [i] to avoid two adjacent vowels, *yainqaq'etej*. However, the resulting form appears as if the *S* is the ERG1sg *in-* allomorph, while the *O* is the ABS2sg *a-* allomorph. The resulting inflected form could mean 'I hug you', which would be pragmatically incorrect since María Florencia hugged him. Interestingly, Yaxum was not the only child to epenthesize a syllable between the verb stem and the inflection for the adult Kaqchikel *xinaq'etej* 'you hugged me'.

(48) *Yinaq'aq'etej.*
You hug me.

Monolingual Lorena (3;08) inserted *q'a*, which is a similar syllable to that inserted by Yaxum in (47). These epenthesized forms resemble reduplication processes. That is, *q'e*, the first syllable of the verb stem was reduplicated and the vowel [e] became [a] to harmonize it with the ergative prefix *a-*. Finally, note that Lorena, unlike Yaxum, inflected the ABS1sg prefix in the appropriate slot, i.e., between the incompletive and ergative prefixes.

Other data concerns the verb stem *-elesaj* 'to take off/out' whose syllables were deleted by some of the children. Säqche' deleted the first syllable of *-elesaj* and modified the quality of the vowel [e] so that it assimilated to [a] the vowel of the ergative prefix, resulting in vowel harmony. He also produced the bilabial stop [b] rather than the semivowel [w] in (49). Interestingly, the bilabial stop is only part of the Spanish sound system; hence, the production of [b] may indicate phonological interference:

(49) *Nawelesaj akoton.* -> *nabasaj asuéter*
You took off your sweater.

Säqche' produced a mixed phrase with Spanish *suéter* marked in genitive case by using the ERG2sg *a-* prefix. Säqche' did not produce these morphophonological phenomena systematically, but he, María Angélica and Ervin were the three children of the group, who dropped syllables of this verb stem:

(50) *-elesaj* -> *-esaj* María Angélica & Säqche'
-lesaj Ervin

María Angélica and Säqche' deleted the verb root *-el*, while Ervin deleted the initial vowel [e] of the verb root *-el*. Interestingly, the Kaqchikel monolingual children (66% of the group) also deleted the vowel of the root as Ervin did, which resulted in inflected verb forms such as *xalesaj* 'you took off'.

The difference between the bilingual children is notable because María Angélica and Säqche' dropped essentially the intransitive verb root *el-* 'to go out from here to there' of the causative verb stem *-elesaj* and kept the derived causative form *-esaj*, while the

monolinguals, as well as bilingual Ervin, kept part of the root *-l*, as well as the derived causative form *-esaj*, resulting in *-lesaj*. There was also a tendency in the group to drop the phoneme [i] in the penultimate syllable of the verb stem *-atinisaj* 'to bathe' resulting in *-atinsaj*. Even the monolinguals deleted more than this syllable, e.g., Lorena (4; 03) produced nkitansaj 'they bathe him' and Henry (7;08) *nkiwatansaj* 'they bathe him'. Lorena dropped the verb's initial vowel [a]. Both Lorena and Henry produced vowel harmony with [i], which became [a] in *-tansaj*. Thus, some of these children seemed to have a strong preference for inflecting one or two syllable verb stems.

3.3.2 Acquisition of the Absolutive Case System

Mayanists labeled the Kaqchikel absolutive system as set 'B'. This case inflects a transitive verb to agree with a direct object, or an intransitive verb to agree with the subject. Dixon (1994) has labeled the object of transitive verbs in ergative-absolutive languages as *O* to differentiate it from the object of transitive verbs in nominative-accusative languages. In this section, I present on table 3.7 the results concerning the children's acquisition of the absolutive inflectional paradigm. The children's results are organized and rank-listed as in previous tables. Kot's percentages were based on the 29 tokens that he produced during the first and second visits. The percentages for the rest of the children are based on 31 tokens.

Table 3.7 Total percentages on absolutive case

	No. tokens	K_8 %	Y_8 %	S_8 %	A_9 %	E_9 %	T_9 %	B_9 %	M_{10} %
1SG	4	0	25	75	100	50	0	75	100
2SG	2	0	0	50	50	100	0	50	100
3SG	12	16	100	100	75	100	100	92	92
1PL	2	50	0	100	100	100	100	100	100
2PL	1	0	0	100	100	0	0	0	0
3PL	10	10	0	10	30	40	0	10	0
TTL	31	15	21	72	76	65	33	54	65

The results on table 3.7 show that the group did not know absolutive case as well as ergative case and that some children did not inflect at all some of the absolutive grammatical persons. The highest average percentages were those of María Angélica (76%) and Säqche' (72%), who produced tokens for all grammatical persons. Ixmukane (65%) and Ervin (65%) got the second highest average percentages; however, Ervin did not produce the ABS2pl prefix, while Ixmukane did not produce any tokens of both the ABS2pl and ABS3pl prefixes. The third highest average, 54 percent, was of Ixb'alam, and, just as in the case of Ervin and Ixmukane, she did not produce the ABS2pl prefix either.

Once more, the children with low average percentages were Tojil (33%), Yaxum (21%) and Kot (15%). Kot did not produce any tokens of ABS1sg and ABS2sg prefixes. Moreover, there is no data on the ABS2pl because of his absence during the third visit. Tojil and Yaxum did not produce even half of the grammatical persons. Yaxum did not produce any tokens of the plural prefixes nor the

ABS2sg prefix. While, Tojil did not produce the prefixes for second person in singular and plural form, neither the ABS1sg prefix, nor the ABS3pl prefix.

A generalization cannot be made about the children's knowledge and productivity of absolutive case based on age. Säqche' (8;00) and María Angélica (9;00) showed that they knew the absolutive system better than the other eight and nine year old children, as well as the rest of the group. In other words, the knowledge of the children who were between 8;00 and 9;00 years oscillated between the low, intermediate and advanced groups. Furthermore, nine year old Ervin knew the absolutive system as well as 10 year old Ixmukane, who was the oldest child of the group. In what follows, I discuss and analyze in detail the children's acquisition of the Kaqchikel absolutive case paradigm as it is reflected in their production of correct and incorrect forms.

3.3.2.1 Grammatical Use of Absolutive Case Morphology

The group's productivity and knowledge of the absolutive case paradigm varied according to the grammatical person. However, table 3.7 shows that the absolutive prefixes that were inflected by the least number of children were the ABS2pl prefix (25% produced it), the ABS2sg and ABS3pl (62% produced them). In comparison, the absolutive prefixes that were inflected by the most children were the ABS1sg prefix (75% produced it), the ABS1pl prefix (87% produced it) and the ABS3sg prefix (100% produced it). This indicates that the group had not yet consolidated their knowledge of absolutive case paradigm; therefore, they had problems at inflecting some

of its prefixes. In what follows, I discuss the results for each grammatical person.

The average for the six children who inflected the ABS1sg *in-* prefix was 71 percent. Only, María Angélica and Ixmukane produced the expected absolutive prefix. The rest of the group (75%) inflected this prefix inconsistently, replaced it with a prepositional phrase, or produced a direct object in genitive case. Of these 75 percent, Kot and Tojil did not inflect *in-* at all. Kot provided a variety of structures such as PPs, omissions and the incorrect prefix, while Tojil provided prepositional phrases 100 percent of the time. The plural counterpart of *in-*, the ABS1pl prefix *oj-* was produced 100 percent of the time by most children. Yaxum was the only child who produced it 50 percent of the time.

The group in general was more productive at producing the ABS2sg prefix *at-*, but those children, who made errors or did not inflect this prefix at all, produced instead a PP, or a direct object marked in genitive case. The average for the five children who inflected this prefix was 70 percent. The group was not productive with the plural counterpart of the ABS2sg. Only two children inflected the ABS2pl *ix-* prefix with an average of 100 percent. Those who did not inflect *ix-* in the verb produced a numeral phrase, a PP, or a direct object in genitive case.

Regarding the absolutive third person prefixes, the children were more productive with the ABS3sg prefix than with its plural counterpart. The average percent for the inflection of the ABS3sg prefix was 84 percent. On the

other hand, only five children produced the ABS3pl and their average was 20 percent. In other words, the children omitted the required ABS3pl *e-* prefix most of the time. Twelve percent produced three tokens, half of the group produced one token and 37 percent produced zero tokens. In the following sections, I discuss and analyze in detail the types of errors that the children committed at inflecting the absolutive case prefixes by using as examples some of the most prominent data.

3.3.2.2 Errors in Absolutive Case

This section discusses the children's incorrect inflections and omitted prefixes, which were included as part of the incorrectly inflected forms due to their infrequent occurrence. Table 3.8 is organized as the previous tables. It lists the average percentages for each child in each grammatical person, but it includes subdivisions in the ABS1sg and ABS2sg grammatical persons. Although the type of error is not specified for the other grammatical persons, it should be assumed that the inflection is ungrammatical. The types of errors that some of the children produced when attempting to inflect the ABS1sg and ABS2sg were prepositional phrases (PPs), direct objects in genitive case (GEN), ungrammatical forms (*) and omitted inflections (OM). Of these types of errors, I consider the prepositional phrase and direct object in genitive case to be two morphosyntactic strategies that the children used to mark *O* and to avoid inflecting absolutive case in the verb.

Some children made errors in the inflection of all absolutive case prefixes, while others did not. As the

results on table 3.8 indicate, for some of the children, certain absolutive prefixes were more difficult to produce than others. For example, the ABS3pl prefix was difficult to produce since the group's error average was 87 percent. In comparison, the least difficult to produce was the ABS1pl prefix; only 12 percent of the group made errors with it. The group made errors with the other grammatical persons as follows: 75 percent with the ABS1sg and ABS2sg prefixes, 62 percent with the ABS2pl, and 50 percent with the ABS3sg.

Table 3.8 Total percentages[12] in absolutive case errors

	K_8	Y_8	S_8	A_9	E_9	T_9	B_9	M_{10}
1SG								
PP	33	50	25	-	25	100	-	-
GEN	-	-	-	-	25	-	-	-
*	33	25	-	25	0	-	-	-
OM	33	-	-	-	-	-	-	-
2SG								
PP	100	100	50	-	-	50	-	-
*	-	-	-	50	-	50	50	-
3SG	8	-	-	16	-	-	8	16
1PL	50	100	-	-	-	-	-	-
2PL	Ø	100	-	-	100	100	100	100
3PL	90	100	90	70	60	100	90	100
TTL	74	75	55	40	70	100	63	72

Regarding the ABS1sg *in-* prefix, Kot, Yaxum, and Tojil produced the most errors, and of these children

[12] This percentage is based on the results of the second visit.

Tojil demonstrated to have no knowledge of this prefix. He produced prepositional phrases 100 percent of the time. That is, he avoided inflecting *in-*, and instead cross-referenced the direct object in a PP such as *chwe* 'to me'. Interestingly, two of the tokens of *in-* were substituted by with a PP 62 percent of the group. This can observed in the examples listed in (51). The adult form for the examples in (51a-b) is *xiniq'etej* 'you (pl.) hugged me' and for the example in (51c) is *xinitz'ët* 'you (pl.) saw me'.

(51) a. *Xaq'etej chwe k'a'i.*

x - 0 - a - q'etej ch(i) w - e

COMPL ABS1sg ERG2sg hug Prep ERG1sg RN

ka'i'

two

You (sg.) hugged to me, two .

b. *Niq'etej chwe yin chix ka'i'.*

n - 0 - i - q'etej

INCOMPL ABS1sg ERG2pl hug

ch(i) w - e yin ch(i) - ix ka'i'

Prep ERG1sg RN Pron1sg Prep ABS2pl two

You (pl.) hug to me, I, the two of you.

c. *Rix, ix k'a'i xixtz'ët npaläj.*

Rix ix ka'i' x - ( ) - i - tz'ët

Pro2pl ABS2pl two COMPL ERG2pl see

n(u) - paläj

ERG1sg face

You, both of you see my face.

In (51a), Tojil instead of inflecting the ABS1sg prefix *in-*, he inflected the ERG1sg prefix *w-* on the relational noun *-e*, which resulted in the contracted form *chwe* 'to

me', and; thus, he indirectly indicated the presence of the direct object. Moreover, he indicated the incorrect number of subjects by inflecting the singular ergative *a-* prefix. Interestingly, he adjoined the numeral 'two' in Kaqchikel, *ka'i'* to indicate the correct number of agents involved in the action. In comparison, Säqche' also produced *chwe* 'to me' in (51b), but unlike Tojil, he used the appropriate inflection, the ERG2pl *i-* prefix. Additionally, he adjoined for emphasis the pronoun *yin* 'I' and *chix ka'i'* meaning 'both of you'. Hence, Säqche' cross-referenced the subject in the verb and encoded the *O* in the PP.

In (51c), Ervin did not inflect the absolutive prefix *in-* either, but unlike Tojil and Säqche, he encoded the *O* in the noun phrase *npaläj* 'my face' that was marked with the ERG1sg prefix *nu-* 'my', but the vowel [u] in this prefix was deleted. Ervin represented the agents of the action with the ABS2pl *ix-* prefix rather than the ERG2pl *i-* prefix. He produced the independent second person plural pronoun *rix* 'you' for emphasis, which was followed by the ABS2pl *ix-* prefix and the numeral *ka'i'* 'two', which together mean 'both of you'. In sum, using a PP or a genitive NP to encode the presence of *O* without inflecting the absolutive prefix in the verb were the most common strategies of 62 percent of the group.

The absolutive prefix combinations to be inflected in the verb were morphologically challenging to the children and they made choices that resulted in ungrammaticalities. Some children, for example, did not select the preconsonantal ERG3sg allomorph *ru-* to inflect

the verb stem *-q'etej* 'to hug'. Instead, they inflected the ERG3sg allomorph *u-* that may only be inflected with the ABS3sg null prefix.

(52) a. **Xinuruq'etej.*

x - in - u - ru - q'etej
COMPL ABS1sg ERG3sg ERG3sg hug
She hugged me.

b. **Xinuq'etej.*

x - in - u - q'etej
COMPL ABS1sg ERG3sg hug
She hugged me.

The adult Kaqchikel for the examples in (52) in completive aspect form is *xinruq'etej* or *xiruq'etej* 'she hugged me', but María Angélica, Säqche' and Ixmukane considered a different combination of allomorphs to inflect the verb stem. María Angélica in (52a) produced *xinuruq'etej*, in which the ERG3sg allomorph *u-* was inflected. Perhaps, she realized that her inflection of *u-* was incorrect and corrected herself by inflecting the allomorph *-ru*. In comparison, Säqche' and Ixmukane inflected the ERG3sg allomorph *u-* in (52b); this allomorph may only be inflected with the null ABS3sg prefix.

These three children inflected the prevocalic ABS1sg allomorph *in-* instead of the preconsonantal allomorph *i-*, which was already indicated in section 3.1.3, that is a dialect variant of Tecpán. Only Ervin produced the expected ABS1sg variant *i-* in *xiruq'etej* 'she hugged me'. Thus, María Angélica doubled the ERG3sg with the *u-* and *ru-* allomorphs, while Säqche' and Ixmukane selected the inappropriate ERG3sg *u-* allomorph, which demonstrates

that allomorphic variation in Kaqchikel is a slow process that takes time. Some of the monolingual children did not produce the ergative and absolutive inflections that were expected:

(53) a. *Xinuq'etej.* (Mercedes 7;03)
x - in - u - q'etej
COMPL ABS1sg ERG3sg hug
She hugged me.

b. *Yinuq'etej.* (Ronald 4;00)
y - in - u - q'etej
INCOMPL ABS1sg ERG3sg hug
She hugs me.

Interestingly, Mercedes and Ronald produced verb inflections that were very similar to those in (52b). Mercedes produced the inflected verb with completive aspect, while Ronald produced it with incompletive aspect. Nevertheless, both children inflected the ABS1sg *in-* allomorph and the ERG3sg allomorph *u-*. Thus, these data demonstrate that monolingual children as well as bilingual children were still working out the allomorphic rules for the inflectional system of Kaqchikel. That is, those rules internal to the ergative-absolutive system as well as those that are dialect variants.

Turning to the ABS2sg *at-* and *a-* allomorphs, Ervin and Ixmukane were the only children who produced the expected allomorphs 100 percent of the time. The rest of the group (75%) inflected the wrong ABS2sg allomorph, or produced PPs (see table 3.8). The inflectional patterns for the ABS2sg prefix resemble those of the ABS1sg prefix. Half of the children factored out the preconsonantal ABS2sg *a-* prefix into prepositions at

least 50 percent and 37 percent of the group produced an ungrammatical form 50 percent of the time. The following examples illustrate the use of PPs to cross-reference *O*, i.e., the direct object:

(54) a. *Xatzu', yin xintzu' chawe.*

x - a - tzu', yin

COMPL ABS2sg see Pro1sg

x - in - tzu' ch(i) - aw - e

COMPL ERG1sg see Prep ERG2sg RN

b. *Xaq'etej chi re.*

x - a - ( ) - q'etej chi r - e

COMPL ABS2sg ERG3sg hug Prep ERG2sg RN

You hugged to her.

In (54a), Yaxum inflected the ABS2sg *a-* prefix, but not the ERG1sg *in-* allomorph, i.e., he did not cross-reference the subject on the verb (cf. adult Kaqchikel: *xatintz'ët* 'I saw you'). In his second attempt, *yin xintzu' chawe*, he produced the 1sg pronoun *yin* and inflected the ergative prefix *in-* on the verb, but without the ABS2sg *at-* allomorph. He cross-referenced the direct object into the prepositional phrase *chawe* 'to you', which resulted in the literal meaning 'she is hugging to you'. Clearly, Yaxum had difficulty inflecting both the ergative and absolutive prefixes on the verb stem.

Tojil in (54b) supplied a verb form that resulted in ambiguity. The verb stem was inflected with ABS2sg *a-* allomorph, which only occurs in the Tecpán dialect with intransitive verbs and transitive verbs whose subject is the ERG3sg *r-* and *ru-* prefixes. Apparently, Tojil used the prepositional phrase *chi re* 'to her' to clarify who

was the agent of the action, but the resulting meaning of (54b) could be 'hugged you to her' or 'you hugged to her'; in either case, the meaning was pragmatically inappropriate and ungrammatical. However, the context made it clear that he was describing the event 'she hugged you'. Hence, these children had difficulty cross-referencing the direct object with the ABS2sg prefix in the verb, but Tojil had additional difficulty cross-referencing the agent with the ergative prefix in the verb.

As with the ABS1sg allomorphs, some of the same children inflected the erroneous allomorph in the ABS2sg, especially in combination with the ERG3sg *ru-* allomorph. The ergative-absolutive prefix combination exemplified in the adult verb form *xaruq'etej* 'she hugged you' caused problems to 87 percent of the children; only Ervin, produced it. The examples in (55) show how María Angélica and Ixmukane inflected *xaruq'etej*.

(55) a. **Xaturuq'etej.*

x	-	at	-	u	-	ru	-	q'etej
COMPL		ABS2sg		ERG3sg		ERG3sg		hug

b. *Xatruq'etej.*

x	-	at	-	ru	-	q'etej
COMPL		ABS2sg		ERG3sg		hug

In (55a), María Angélica doubled what appear to be the ERG3sg *u-* and *ru-* allomorphs (see 52a for a similar example). However, I suggest that *u-* was epenthesized to divide the inflectional morphemes into CV syllables. María Angélica was systematic since she produced it in two different examples that required *ru-*. In contrast, Ixmukane in (55b) inflected the same ergative and

absolutive allomorphs as María Angélica did, but she did not epenthesize a vowel between the allomorphs. Hence, both girls selected the prevocalic ABS2sg *at-* allomorph rather than the Tecpán variant allomorph *a-*. Nevertheless, Ixmukane's inflected verb form was grammatical, whereas María Angélica's was not.

The Kaqchikel monolingual children evidenced similar processes in the production of the adult Kaqchikel verb form *xaruq'etej* 'she hugged you'. The examples in (56a-d) show that three monolingual children, like bilingual María Angélica and Ixmukane, also inflected the expected ERG3sg *ru-* prefix, but not Tecpán's variant ERG2sg *a-* prefix:

(56) a. *Xatiluq'etej*[13].
b. *Xatiruq'etej.*
c. *Xatruq'etej rija.*
d. *Yaruq'etej.*

Ronald (4;00) in (56a) and Henry (7;02) in (56b) inserted the vowel [i] between the consonants of the ergative and absolutive allomorphs. In contrast, Marvin (6;04) did not epenthesize a vowel between the ergative and absolutive allomorphs in (56c). Moreover, he produced the pronoun *rija* 'she' for emphatic effect. Finally, in (56d), Lorena (3;08) produced the expected ergative allomorph and absolutive Tecpán variant. Although she attached *y-*, the incompletive aspect prefix.

Evidently, some of the monolinguals, as well as the bilinguals, were still working out the allomorphic rules

[13] Note that Ronald in (56a) produced the lateral consonant [l] instead of [r], which is a common phonological process in young children.

of the ergative and absolutive case systems. Furthermore, the data from both the monolingual and bilingual children suggest that both groups were acquiring the allomorphic rule application verb by verb and at an individual pace. Two children produced the expected ergative and absolutive allomorphs. Monolingual Lorena (3;08) produced them (16% of her group) and bilingual Ervin (9;00) produced them as well (12% of his group). Thus, the data documents that adult Kaqchikel verb inflections such as in *xaruq'etej* may be produced as early as the age of three (e.g. 56d), but that even at the age of nine, it may not yet be produced (e.g. 55a).

Turning to the ABS3sg, the difficulty of accounting for it resides in that it is a phonologically null prefix. Other Mayan languages also have an ABS3sg null prefix, e.g., Quiche'. Pye (1980) did not include this prefix in his study of the acquisition of Mayan Quiche' for it is not possible to determine when this prefix is acquired in Quiche'. However, I suggest that it is possible to determine its acquisition in Kaqchikel. Since the difference between Quiche' and Kaqchikel is that in Kaqchikel, the presence of the ABS3sg null prefix is indicated by the presence of *n-*, the incompletive aspect marker, and, if the ergative prefix is in third person, the prefix *u-* also indicates the presence of this null prefix. Thus, I included this prefix and accounted for it based on the presence of the incompletive aspect marker *n-*, which can only be inflected when the phonologically null ABS3sg is 'present' (see section 3.1.2). In (57), I present an example of this type of verbal inflection:

(57) *Nuchäj rey.*

N - Ø - u - chäj r - ey

INCOMPL ABS3sg ERG3sg wash his teeth

He washes his teeth.

The incompletive aspect prefix *n-* is essentially selected by the presence of the phonologically null ABS3sg prefix. It would be ungrammatical to inflect the verb with *y-*, the incompletive prefix as in **yuchäj rey*, which may only be inflected with the other five grammatical persons in absolutive case.

The children produced the expected incompletive aspect marker *n-* most of the time; however, some children unexpectedly produced verb forms in progressive or completive aspects. They also produced participial and intransitive verb forms as well, although these forms are not technically ungrammatical, they were considered errors. Table 3.8 shows that half of the group made these types of errors. María Angélica and Ixmukane produced errors 16 percent of the time, while Kot and Ixb'alam produced errors 8 percent of the time. Two examples of the verb forms that were excluded are:

(58) a. *Xusu' ruwi'.*

x - Ø - u - su' ru - wi'

COMPL ABS3sg ERG3sg clean ERG3sg hair

He cleaned his hair.

b. *Rija Jin netz'an kin rutz'i'.*

Rija jin n - ( ) - tz'an kin ru - tz'i'

He PROG INCOMPL ABS3sg play with his dog

He is playing with his dog.

In (58a), Ixmukane produced an inflected verb form that was grammatical, but the inflection of the completive

aspect marker *x-* is not exclusive to the ABS3sg null prefix. That is, this inflected verb form with the completive prefix could not be included in the analysis of the ABS3sg null prefix because the prefix *x-* can be inflected with all grammatical absolutive persons. Ixb'alam produced a verb form in progressive aspect in (58b), which requires that the auxiliary and the main verb be inflected (see section 3.1.2), but she did not inflect *-tajin* and dropped its first syllable[14]. Even if she marked the verb form with the incompletive marker *n-*, she still did not use a transitive verb. Consequently, verb forms such as those in (58) were excluded.

The ABS1pl *oj-* prefix was one of the absolutive prefixes that the group in general did not make many errors at inflecting. Nevertheless, table 3.8 shows that Yaxum produced errors inflecting this prefix 100 percent of the time and Kot 50 percent of the time. These errors occurred in all the tokens of the verb *-q'etej* 'to hug'. As previously shown, these children did not cross-reference the direct object in the verb, but rather they cross-referenced it in a PP, or a DP. For instance, the adult Kaqchikel form of (59a) is *yojaq'etej* 'you hug us', but Yaxum erroneously cross-referenced the direct object in the contracted PP *che* 'to her' and adjoined the DP *ri ka'i'*. I suggest that Yaxum was aware that he made an error at inflecting a singular direct object and attempted to repair it by producing the DP *ri ka'i'* meaning 'the two'. Moreover, the aspect prefix *n-* was misused since it may only be inflected when it is

[14] Other children in the group did not inflect the auxiliary *-tajin* either and produced reduced forms such as *-jin* and *-ajin* as well.

followed by the null ABS3sg prefix. Yaxum's intended meaning was 'you two hug me'.

(59) a. **Naq'etej che, ri ka'i'.*

N - ( ) - a - q'etej
INCOMPL ABS1pl ERG2sg hug
ch(i) - (w) - e ri ka'i'
Prep ERG1sg RN the two
You (sg.) hug to me, the two.

b. **Nru'un abrazar che, chi oj ka'i'*[15].

N - ( ) - ru - 'un abrazar
INCOMPL ABS1pl ERG3sg do Spa-hug
ch(i) - (r) - e chi oj ka'i'
Prep ERG2sg RN to ABS1pl two
She hugs to me, to us two

Kot produced (59b) that shows no inflection of the absolutive marker in the auxiliary verb that is constituent of the mixed verb (cf. adult Kaqchikel *xojruq'etej* 'she hugged us'). The Kaqchikel part of this mixed verb, the auxiliary verb *-b'än*, was reduced to the form *'un*, which was marked with the incompletive aspect prefix *n-*, and with the ERG3sg *ru-* allomorph rather than the expected *u-* allomorph. The Spanish part of the mixed verb in (59b) is the infinite verb *abrazar* 'to hug'. Crucially, the problem with the VP that Kot produced is the cross-referencing of the direct object in the prepositional phrase *che* 'to me'. Interestingly, Kot corrected himself by immediately producing the subordinate clause *chi oj ka'i'* meaning 'to us two', which was intended to mean 'she hugs both of us'. Hence,

[15] In Kaqchikel, an absolutive marker may be free when it is adjacent to a numeral such as *ka'i'*.

these children cross-referenced the direct object in DPs and PPs that included a numeral.

Regarding the ABS2pl *ix-* prefix, 62 percent of the group did not produce this prefix. Interestingly, the fact that the direct object was in plural form seemed to have influenced the children's structures. Since more children used the numeral two, Kaqchikel *ka'i'*, in PPs or DPs to encode the number of patients. The adult Kaqchikel form for the examples listed in (60) is *xixintz'ët* 'I saw you'. Yaxum inflected *i-* instead of the ERG1sg *in-* prefix in (60a). As noted on table 3.5, Yaxum was one of the four children who inflected *i-* instead of *in-*. Moreover, he did not inflect the ABS2pl *ix-* prefix, and the DP *ri ka'i'* was his strategy to compensate for this lack of inflection. On the other hand, Tojil in (60b) cross-referenced the direct object in the DP *ix ka'i'* meaning 'you two'.

(60) a. *Xitzu' ri ka'i'.*

X - 0 - i - tzu' ri ka'i'

COMPL ABS2pl ERG1sg see the two

I saw _ the two.

b. *Xintzu' ix ka'i'.*

x - 0 - in - tzu' ix ka'i'

COMPL ABS2pl ERG1sg see ABS2pl two

I saw you two.

c. *Yin xintz'ët ipaläj chi ix ka'i'.*

yin x - ( ) - in - tzät

Pron1sg COMPL ABS2pl ERG1sg see

i - paläj chi ix ka'i'

ERG2pl face to ABS2pl two

I saw your faces to you two.

In comparison, Ervin and Ixb'alam produced a more complex structure in (60c). They included the emphatic pronoun *yin* 'I', the direct object in genitive case *ipaläj* 'your faces', and the absolutive prefix in the prepositional phrase *chi ix ka'i'* 'to you two'. Although the structure in (60c) is quite advanced, it still lacks the inflection of the expected ABS2pl prefix *ix-* in the verb. In fact, only 29 percent of the group inflected it.

Turning to the ABS3pl *e-* prefix, this prefix is not of high frequency use particularly if it cross-references direct objects on the verb which are not pluralized with the particle *taq*. Moreover, plants and artifacts in direct object position are especially excluded from being cross-referenced in the verb. If nouns that refer to animals and humans function as direct objects in a clause, then, they are cross-referenced on the transitive verb as plural, i.e., they are marked with the ABS3pl *e-*

prefix. Thus, plural inflection appears to be a marked form in Kaqchikel since it is exclusive to a small set of nouns that refer to certain animals and humans. In order to test whether the children had acquired this morphosyntactic difference. They were presented with eleven drawings picturing humans performing actions on humans or animals and vice versa.

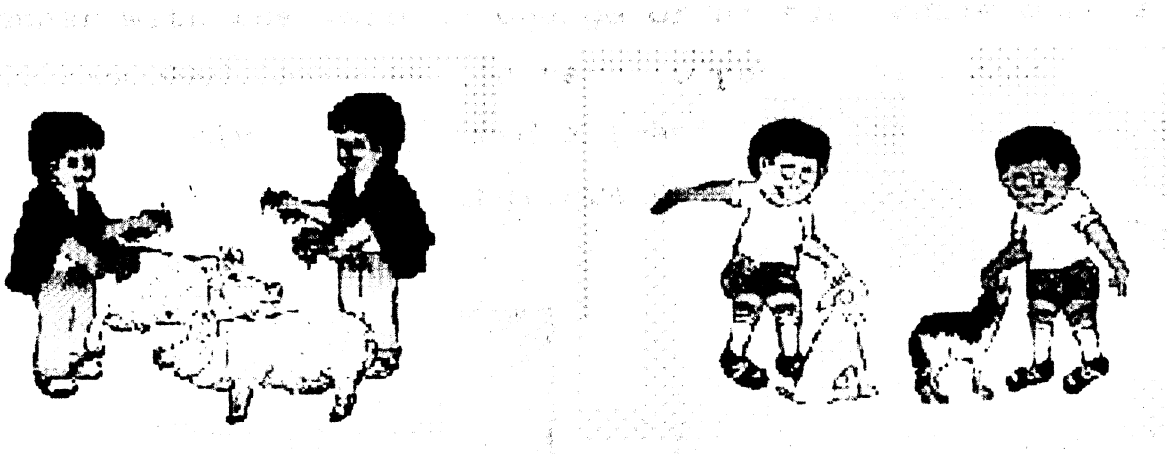


Figure 3.1 Human agents and [+animate] patients

The drawings in figure 3.1 were used during the first visit, and they illustrate events in which two humans and two animals are engaged in the actions of feeding and petting. These drawings were expected to be described with transitive verbs and the direct objects or patients were expected to be cross-referenced with the ABS3pl *e-* prefix. However, the children's results for the inflection of *e-* were unexpected. The children did not inflect the ABS3pl *e-* prefix, i.e.; they did not cross-reference the direct objects even those that were human. The majority of the children interpreted the drawings such as those in figure 3.1 in two ways: (1) they focused on one event and produced verb forms with both ERG3sg and ABS3sg prefixes; or (2) they focused on both events and cross-referenced the agents with ERG3pl *ki-* prefix, but

did not do so with the patients; the ABS3sg null prefix was inflected instead of the grammatical ABS3pl *e-* prefix.

During the second visit, another set of six drawings was presented to the children for interpretation and description. Two drawings depicted the representation of events that could be described with the verb to bathe, another with the verb to charge or attack, while others were repeated, such as the verb to push. Of these drawings, only one depicted a [+animate] agent that is a bull; two of those drawings are presented below.

Figure 3.2 [+animate] agents and [+human] patients

This new approach of representing two patients receiving an action by one agent made a qualitative difference for three children, i.e., 37 percent of the group. These children, María Angélica, Ervin and Ixb'alam, were particularly successful at inflecting the ABS3pl *e-* prefix in the verb that described the bull charging the men in figure 3.2. In fact, María Angélica and Ervin were the children who inflected *e-* absolutive prefix the most. Ervin inflected this prefix 40 percent of the time and María Angélica 30 percent of the time. The rest of

the group hardly produced this prefix or did not produce it at all. Kot, Säqche' and Ixb'alam produced it 10 percent of the time. While Ixmukane, Tojil and Yaxum did not produce this prefix at all.

Interestingly, even though the direct objects were either animals or humans, the group had the highest error average, 87 percent, with the inflection of the ABS3pl prefix. The children generally inflected the ABS3sg null prefix, which was indicated by their use of the incompletive aspect *n-* prefix; for instance:

(61) a. **Nunim che ka'i' ak'wala'.*

N - Ø - u - nim
COMPL ABS3sg ERG1sg see
ch(i) - (r) - e ka'i' ak'wala'
Prep ERG3sg RN two
He push her, to two children.

b. **Nutorij ka'i' achin.*

N - Ø - u - torij ka'i' achin
INCOMPL ABS3sg ERG3sg push two men
It pushes two men.

Ixmukane in (61a) described the fist drawing on figure 3.2, which she inflected with both ergative and absolutive forms in third person singular (cf. adult Kaqchikel: *yerunim* 'he pushes them'). In (61b), Säqche' at describing the second drawing in figure 3.2 also inflected the ABS3sg null prefix (cf. adult Kaqchikel: *yerutöq* 'he throws them'). Both Ixmukane and Säqche' marked the verb with *n-*, the incompletive aspect marker that must be inflected when the ABS3sg null prefix is 'present'.

The little productivity of the ABS3pl *e-* prefix suggests that half of the group made the generalization that all nouns that are direct objects are treated as nonplural when cross-referencing them on the verb and this resulted on the inflection of the ABS3sg null prefix. The other half of the group showed that they had started to acquire the ABS3pl *e-* prefix. These children inflected it only when the direct objects were human, although they did so inconsistently and not without problems. Compare the adult Kaqchikel form *yeratinsaj* 'she bathes them' with the examples in (62):

(62) a. *Jin yeratin pa jun tuj.*

Jin y - e - r - atin
PROG INCOMPL ABS3pl ERG3sg bathe
pa jun tuj
in a Mayan bath
They are bathing them in the Mayan bath.

b. *La ixoq neruch'äj kij pa tuj.*

La ixoq n - e - u - ch'äj
the woman INCOMPL ABS3pl ERG3sg washes
k - ij pa tuj
their back in Mayan bath
The woman washes their backs in the Mayan bath.

In (62a), Kot provided the expected ABS3pl *e-* prefix and the ERG3sg *r-* prefix on the verb *-atin*, which is the intransitive counterpart of the causative verb stem *-atinisaj*. That is, Kot treated *-atin* as if it were a transitive verb stem. He also used the auxiliary verb *-tajin* to indicate progressive aspect, but deleted the first syllable and did not inflect it with the appropriate aspect marker. On the other hand, María

Angélica in (62b) provided a transitive verb inflected with the appropriate ergative and absolutive prefixes. The ABS3pl *e-* prefix requires that incompletive aspect be marked with the *y-* prefix; however, she inflected incompletive aspect with the prefix *n-*. Thus, Kot had yet to acquire the transitive verb form of *-atin* and María Angélica had to acquire the incompletive aspect form *y-* that is inflected along with the ABS3pl *e-* prefix.

Finally, some of the children produced *e-* in morphological contexts where it was not expected. The children described drawings that showed individuals acting upon objects such as vegetables (see figures in appendix H). Although vegetables may be pluralized with the particle *taq*, they are not classified as either part of the human or animal species. Despite of this some children (37 percent of the group) inflected the ABS3pl *e-* prefix without pluralizing the direct object noun with the particle *taq*. The examples in (63) were not included in the tables on absolutive case in this section, but were included in appendix F. However, these examples demonstrate that some children were still in process of acquiring this constraint. In (63a), Ervin described a woman who put a plate of vegetables on the table. María Angélica in (63b) described a boy who cut corn. In both cases, the ABS3pl prefix *e-* was inflected, but as mentioned earlier, animate objects such as vegetables are not cross-referenced with the prefix *e-* in the verb, unless they are marked with the particle *taq*. These examples demonstrate that Ervin and María Angélica were

still in the process of sorting out the marked constraints for the inflection of the ABS3pl prefix *e-*.

(63) a. *Xeruya' chuwäch mesa.*

x - e - ru - ya'
COMPL ABS3pl ERG3sg put
ch(i) u - wäch mesa
Prep ERG3sg RN table
She put them in front of the table.

b. *Xeruchupu el jun ti äj.*

x - e - ru - chupu el jun
COMPL ABS3pl ERG3sg cut Dir one
ti äj
little corn
He has cut the corn.

Thus, these data suggest that the acquisition of the ABS3pl prefix *e-* and its constraints is a process that takes some time since the majority of the group did not inflect this prefix in the required morphosyntactic contexts.

3.3.3 Complex Verbs and Inalienable Direct Objects

This section focuses on two types of structures. The first is the complex verb that is inflected along with another bound morpheme and together give meaning to the verb. The second is the transitive verb whose action is directed toward an inalienable object such as a body part, or a possessed object, e.g., a garment. The particular aspect of these constructions is that they enter into a possessor-possessed relation that in Kaqchikel is obligatorily marked in ergative case. As already mentioned, in Kaqchikel, ergative case must be

inflected to indicate genitive case, (see section 3.1.3.1). Table 3.9 lists each child's results at inflecting ergative case in each grammatical person. Kot produced a total of 35 tokens since he only was recorded during the first and second visits, while the percentages for the rest of the children are based on 43 tokens. Although errors occurred, the group in general was successful at marking possession by inflecting ergative case.

Table 3.9 Results in genitive case

	No. tokens	K_8 %	Y_8 %	S_8 %	A_9 %	E_9 %	T_9 %	B_9 %	M_{10} %
1SG	9	71	89	100	100	89	67	67	100
2SG	7	60	71	86	100	100	86	100	100
3SG	13	85	46	69	85	100	54	69	85
1PL	1	Ø	0	100	100	100	0	100	100
2PL	4	50	75	100	100	100	50	75	100
3PL	9	50	0	33	44	22	0	33	56
TTL	43	63	47	81	88	85	43	74	90

Ixmukane was the most productive child; she got an average of 90 percent at inflecting the nouns that were required to be case marked. She was followed by Säqche', María Angélica and Ervin whose averages ranged between 81 and 88 percent. The average of Ixb'alam was 74 percent and that of Kot was 63 percent. The children who showed the least productivity at inflecting this case were Yaxum and Tojil; they did not inflect the ERG1pl and ERG3pl prefixes and their percentages were below 50 percent. In what follows, I analyze and present selected data on the

children's grammatical use and errors made at inflecting genitive case.

3.3.3.1 Grammatical Use of Complex Verbs and Inalienable Direct Objects

Although there was a tendency with some children to not mark genitive case on nouns that were the direct objects of the transitive verb, generally the group showed to have better knowledge of the ergative prefixes for the singular persons than the plural ones. The highest average of 88 percent went to ERG1sg *nu-* and the ERG2sg *a-* prefixes. The second highest average of 81 percent went to the ERG2pl *i-* prefix, the third highest average of 74 percent went to the ERG3sg *ru-* and *r-* allomorphs and this was followed by the ERG1pl *qa-* prefix (71%). The average for the inflection of the ERG3pl *ki-* and *k-* allomorphs was 30 percent, which was the lowest average. Thus, the ERG3pl allomorphs were the least productive.

3.3.3.2 Incorrect Use and Omissions of Complex Verb and Inalienable Direct Objects

In all the grammatical persons there were cases of incorrect use of a prefix, and, or the omission of a prefix. The inflection of a prefix was considered incorrect when the inflected prefix was the wrong prefix, when a PP substituted for the inflection of ergative case, or when transference from L2 took place. Table 3.10 details for each child in every grammatical person the percentage and type of error made, these were coded

as follows: prepositional phrase (PP), omission (OM), incorrect prefix (*) and transference (TRANS).

Table 3.10 Total percentages in genitive case errors

	Error Type	K_8 %	Y_8 %	S_8 %	A_9 %	E_9 %	T_9 %	B_9 %	M_{10} %
1SG	PP	29					11	22	
	OM		11			11	22	11	
2SG	PP	40	14				14		
	OM		14	14			14		
3SG	OM	17	31	15			38	31	8
	TRANS		15						
	*			8					
1PL	OM		100				100		
2PL	OM	50						25	
	*		25				50		
3PL	OM	50	56	56	22	33	88	33	44
	*		44	11	33	44	11	33	
TTL		37	52	17	9	15	58	26	7

Interestingly, 37 percent of the group substituted the inflection of only the ERG1sg and ERG2sg prefixes with PPs. Kot, Yaxum, Tojil and Ixb'alam were the children who provided PPs rather than direct objects marked in ergative case. These replacements occurred with the verbs *-kusaj* 'to put on' and the verbs *-elesaj* 'to take off/out'.

(64) a. *Xakusaj chwe.*

x - Ø - a - kusaj ch(i) - w - e

COMPL ABS3sg ERG2sg put Prep ERG1sg RN

You put it on to me.

b. *Nab'än poner chwe.*

n - Ø - a - b'än poner ch(i) - w - e

INCOMPL ABS3sg ERG2sg do Spa-put Prep ERG1sg RN

You put it on to me.

Ixb'alam in (64a) and Kot in (64b) cross-referenced the direct object on the PP *chwe* 'to me' rather than the DP *nukoton* 'my sweater'; the adult Kaqchikel form for (64a-b) is *xakusaj nukoton* 'you put my sweater on me'. This strategy is reminiscent of that used by some children when attempting to inflect absolutive case (see example 54). As shown in (64), some children cross-referenced the direct object in a PP, instead of inflecting absolutive case on the verb.

Omissions occurred with all grammatical persons, except with the ERG1pl prefix and these were of two types. The first type was the omission of the prefix on the direct object and the second was the omission of the entire direct object. Regarding the latter type of prefix omission, sixty-two percent of the group omitted the direct object, which mostly occurred with first, second and third singular persons. Tojil left out the direct objects more often than any of the other children, i.e., 11 percent out of 37 tokens. While, Ixb'alam left it out 5 percent of the time, while Kot, Yaxum, Säqche' and Ervin left it out 3 percent of the time.

Also, the omissions made by these children occurred with two Kaqchikel verbs *-elesaj* 'to take off/out' and

-su' meaning 'to clean'; and with three Spanish verbs *peinar* 'to comb', *cepillar* 'to brush' and *secar* 'to dry off'; for instance:

(65) a. *Rat xalesaj.*

rat x - Ø - a - lesaj
you INCOMPL ABS3sg ERG2sg take off
You take it off.

b. *Nub'än peinar.*

n - Ø - u - b'än peinar
INCOMPL ABS3sg ERG3sg do Spa-to comb
She combs it.

In (65a), Ervin produced the inflected verb along with a pronoun for emphasis, but left out the direct object *nukoton* 'my sweater' (cf. adult Kaqchikel: *nawelesaj nukoton* 'you take my sweater off me'). Similarly, Tojil in (65b) left out the direct object *ruwi'* 'her hair' which is required in *nujik ruwi'* the adult Kaqchikel form that means 'she combs her hair'. Note that Tojil provided a verb phrase that consists of the Kaqchikel auxiliary *-b'än* and the Spanish infinitive verb *peinar* 'to comb', which unlike Kaqchikel does not require a noun in the direct object position.

There was a tendency among 37 percent of the children to leave out the direct object when the verb form was mixed. I suggest that Tojil, Yaxum and Ixb'alam transferred the transitive properties of the Spanish verbs that they selected. These verbs may be used grammatically without the direct objects and they are not assigned genitive case; however, they must cliticize a reflexive or dative pronoun such as *se* 'self' or *la* 'to her'; e.g., *se peina* 'she combs herself', or *la peina a*

ella 'she combs (to) her', in both examples in (65) the realization of the inalienable body part *hair* in the direct object position is optional.

Regarding the omission of ergative inflection on the direct object, all children, to a lesser or greater degree, omitted inflecting genitive case. The most commonly omitted genitive markers were the ERG1sg *nu-* prefix, the ERG3sg *ru-* prefix and the ERG3pl *ki-* prefix. The following examples show the omission of both the ERG3sg and ERG1sg prefixes on NPs that consist of inalienable body parts:

(66) a. *Xijik *wi'*

x - Ø - i(n) - jik wi'
COMPL ABS3sg ERG3sg comb hair
I combed hair.

b. *Jun ak'wal nuresaj ri *ixk'äq.*

jun ak'wal n - Ø - u - r - esaj
a boy INCOMPL ABS3sg ERG3sg ERG3sg pull out
ri ixk'äq
the fingernails
A boy pulls out (cuts) the fingernails.

c. *Tajin nkitij *chilmol.*

Tajin n - Ø - ki - tij chilmol
a boy INCOMPL ABS3sg ERG3sg eat soup
They eat soup.

The examples in (66) show that some children did not produce the obligatory inflection of direct objects. Ixb'alam in (66a) did not inflect the obligatory direct object *wi'* with the ERG1sg *nu-* prefix (cf. adult Kaqchikel: *nuwi'* meaning 'my hair'). Ixmukane needed to inflect the direct object *ri ixk'äq* with the prevocalic

ERG3sg *r-* prefix in (66b). Compare it with adult Kaqchikel inflected form *rixk'äq* 'his fingernails'. Similarly, Ervin in (66c) did not mark the direct object *chilmol* 'soup' with the ERG3pl *ki-* prefix, which in Kaqchikel is obligatory (cf. adult Kaqchikel: *kichilmol* 'their soup'). It is important to note that the NPs of these children resemble Spanish in that the inalienably possessed nouns that are the direct objects for the same types of verbs are not marked in genitive case. Thus, I suggest that these children transferred an L2 structure to L1, particularly Ixb'alam and Ixmukane, who in (66a-b) produced Spanish NP structures and not Kaqchikel ones.

Table 3.10 shows that the children's incorrect use of ergative case occurred with the ERG3sg, ERG2pl and ERG3pl prefixes. These errors involved the wrong choice of prefix, the inflection of the singular prefix counterparts (ERG2sg and ERG3sg) and the double inflection of a prefix. For example, regarding the ERG2pl *i-* prefix, Tojil inflected half of the time the singular counterpart of *i-*, the ERG2sg *a-* prefix, while Yaxum inflected the ERG3sg *ru-* prefix instead of the ERG2pl prefix 25 percent of the time.

Turning to the errors that the group produced with the ERG3pl allomorphs, the children (62%) replaced them with the ERG3sg *ru-* prefix, the singular counterpart. Also, 25 percent of the group produced double prefixes mostly of the ERG3sg and ERG3pl forms. It is important to note that for 37 percent of the group the inflection of the ERG3sg prefix *ru-* on the direct object caused disagreement with the prefix that cross-references it on the verb.

Some examples of these types of structures are listed in (67). Compare the structure of (67a) to adult Kaqchikel *nikusaj ikoton* 'you (pl.) put on your sweaters' and note that Tojil marked the noun *koton* 'sweater' with the ERG2sg *a-* prefix instead of ERG2pl *i-* prefix.

(67) a. *Xekosaj*[16] *re ka'i' ri *akoton.*

X - Ø - e - kosaj re ka'i'
COMPL ABS3sg ERG2pl put on the two
ri a - koton
the ERG2sg sweater
You (pl.) two put on your sweater.

b. *Yerwatinsaj la ral.*

y - e - r - w - atinsaj la r - al
INCOMPL ABS3pl ERG3sg Epen bathe the ERG3sg son
She bathes them, her child.

c. *Ri kite' nkiwatinisaj chi ka'i' kiral.*

ri ki-te' n - Ø - ki - w -
the their mothers INCOMPL ABS3sg ERG3pl Epen
-atinsaj chi ka'i' ki - r - al
bathe to two ERG3pl ERG3sg children
Their mothers bathe to two their children.

Similarly, Ervin in (67b) inflected the singular counterpart to the ERG3pl prefix. That is, he inflected *-al* 'child' with the prevocalic ERG3sg allomorph *r-* rather than with the prevocalic ERG3pl allomorph *k-*. Ervin's inflected form *ral* 'her child' resulted in disagreement with the ABS3pl prefix *e-* in the verb. In other words, the verb *yerwatinsaj* 'she bathes them'

[16] Tojil produced vowel lowering in the ERG2pl prefix and the vowel of the first syllable in *-kusaj* 'to put on'. The high vowels [i] and [u] were lowered to [e] and [o].

disagrees with the explicit direct object *ral* 'her child'. Compare Ervin's inflected form with the adult Kaqchikel *yekatinisaj la ka'i' kal* 'they bathe their children'. Also, compare the previous adult Kaqchikel form with that produced by Ixb'alam and which is listed in (67c). She doubled the genitive case marker on the noun *-al* 'child' by first inflecting the expected prevocalic ERG3pl *k-* allomorph, and, then by inflecting the singular prevocalic counterpart *r-* in *kiral* 'their, her child'. These data indicate that 75 percent of the group had problems inflecting the ERG3sg, ERG2pl and ERG3pl prefixes. They specially had problems inflecting the ERG3pl allomorphs.

Regarding transferred forms, I have called transferred forms those NPs in direct object position that were not inflected with Kaqchikel genitive case, but with genitive case markers of Spanish. The results on table 3.10 show that Yaxum was the only child who transferred from Spanish to Kaqchikel. Transference only occurred with the ERG3sg prefix and two examples are listed in (68). Interestingly, there is not only transferring of a Spanish genitive case marker in these data, but there are also mixed verb forms.

(68) a. *Nub'än peinar su wi'.*

n - Ø - u - b'än peinar su wi'

INCOMPL ABS3sg ERG3sg do Spa-to comb her hair

She combs her hair.

b. *Nub'än cortar su pelo .*

n - Ø - u - b'än cortar su pelo

INCOMPL ABS3sg ERG3sg do Spa-to-comb-her-hair

She combs her hair.

In (68a), Yaxum supplied the Spanish possessive third person singular pronoun *su* 'her' with *-wi'* which is the Kaqchikel noun for *hair*. An interesting difference between these two languages is that the pronoun in Spanish is a free morpheme, but not in Kaqchikel. Moreover, the Kaqchikel form *wi'* is a bound morpheme derived from *wiaj* 'hair' and it must be assigned with genitive case. Thus, Yaxum either treated Spanish *su* as a bound morpheme, or treated *-wi'* as a free morpheme. Compare (68a) with (68b) and note that Yaxum produced the entire DP *su pelo* 'his hair' in Spanish. I suggest that especially the transferred form in (68a) was a symptom of Yaxum's language loss. Thus, Yaxum's DP in (68a) has an unusual structure in that he transferred a Spanish closed class category into Kaqchikel.

Yaxum also produced in (69) mixed verbs with the Kaqchikel auxiliary verb *nub'än* and the Spanish verbs *trenzar* 'to braid'. More evidence of Yaxum's possible language loss is the morphosyntactic structure of certain VPs that he produced; for instance:

(69) *Nub'än trenzar che rute'*.

n	-	Ø	-	u	-	b'än	trenzar
INCOMPL		ABS3sg		ERG3sg		do	Spa-to braid
ch(i)	(r)	-	e	ru	-	te'	
Prep	ERG3sg		RN	ERG3sg		mom	

She braids to her mother.

Yaxum also provided a mixed verb form and a prepositional phrase instead of a direct object in genitive case (cf. adult Kaqchikel: *nupachuj ruwi' ri ral* literally 'she braids her hair of her child'). In (69), Yaxum's prepositional phrase in Kaqchikel *che rute'*, meaning 'to

her mother', resembles that of Spanish accusative assignment marked with *a* 'to', which translated into Kaqchikel is *che*. The Spanish equivalent VP is *trenza a su mamá*; thus, (69) appears like a Kaqchikel VP, but is a Spanish VP with lexemes from both languages.

Regarding morphophonological processes, 12 percent of the children epenthesized [w] with the inflection of the ERG3sg and ERG3pl prefixes on vowel initial nouns. The following examples show the application of epenthesis on this type of nouns:

(70) a. *ral* 'her child' -> *ruwal*
b. *kal* 'their children' -> *kiwal*

Ixb'alam inserted [w] between the ERG3sg and ERG3pl prefixes and the noun *-al* 'child', resulting in *ruwal* 'her child' and *kiwal* 'their children'. I suggest that the prevocalic nature of the nouns was the cause for this morphophonological process. Apparently, Ixb'alam had not yet consolidated her knowledge of ERG3sg and ERG3pl prevocalic allomorphs, which suggests that the acquisition of allomorphic variation is a process that may take some time, since Ixb'alam was 9;08.

Moreover, the delay and difficulty in acquiring prevocalic allomorphs is evidenced by the results of a task I implemented to test knowledge of genitive marking by both Kaqchikel monolingual and Kaqchikel-Spanish bilingual children. Some of the children either doubled the ergative prefix or epenthesized [w] between the prefix and the vowel initial noun. Table 3.11 lists some examples from a monolingual Ixyamaniq and four bilingual children (Kot, Säqche', Ixb'alam and Ixmukane).

Table 3.11 Genitive case in third person singular

	Raqän 'her legs'		Waqän 'my legs'
Ixyamaniq	Ruraqän		Nuwaqän
Säqche'	Ruwaqän		Nuwaqän
Kot	Ruwaqän		Nuwaqän
Ixb'alam	Ruwaqän		Nuwaqän.
Ixmukane	Raqän		Nuraqän, nuwaqän

The noun *aqanaj* 'leg(s)' undergoes morphological change when it is marked in genitive case, e.g., *raqän* 'her legs' and *waqän* 'my legs'. In both examples, the last syllable is dropped and the vowel becomes [+lax], when prevocalic ergative prefixes such as *w-* or *r-* are affixed. In the first column, Ixyamaniq (2;00) doubled the ergative prefixes, while Säqche', Kot and Ixb'alam epenthesized [w]. Ixmukane was the only child who produced the expected form *raqän*; however, notice her ambivalence when producing the inflected noun *waqän* 'my legs' in the second column. She started with *nuraqän* 'my-her legs', which she case marked twice, but corrected herself and provided the form *nuwaqän*, as did the rest of the children. Thus, children as young as 2;00 and as old as 10;00 were still in process of acquiring the specific allomorphic rules of Kaqchikel genitive case assignment by way of the ergative case system.

3.3.3.3 The Kaqchikel Complex Verb and Reciprocity

A small 3 percent of the corpus illustrates the children's knowledge of the reciprocal form in second person plural. In section 3.1.3.2, it was indicated that

marking reciprocity in Kaqchikel requires a relational noun (RN) such as *-wi'* that must be marked with ergative case to indicate the number and person of the subject cross-referenced in the verb. The relational noun elicited in this study was *iwi'* 'each other', which is marked with the ERG2pl *i-* prefix. The children produced the three tokens of this reciprocal form with little success. The highest percentages were scored by Säqche' and Ixmukane (66%), half of the group scored 33 percent, while Yaxum and Kot scored zero percent. In what follows, I illustrate specific examples of this reciprocal form.

The adult verb form *yikuch iwi'* 'you covered each other' was produced by twenty-five percent of the group, as was the verb form *xiq'etej iwi'* 'you hugged each other'. These low percentages showed that the children had not yet acquired the structure to encode reciprocal relations in verbs. Most of the children used direct objects in genitive case or PPs to indicate the reciprocity of the actions that María Florencia and I performed. For example, the adult inflected verb form *xikuch iwi'* 'you covered each other' was produced by some of the children as follows:

(71) a. **Niquj la iperraj junan.*

N - Ø - i - quj

INCOMPL ABS3sg ERG2pl cover

la i - perraj junan

the ERG2pl shawl same

You (pl.) put in your shawl, the same.

b. **Xixq'etej chix ka'i'.*

X - ix - 0 - q'etej ch - ix ka'i'

COMPL ABS2pl ERG2pl hug to ERG2pl two

-- hugged you to both of you.

Ervin produced in (71a) the appropriate inflection in the verb *-quj* 'to cover with a big blanket' (cf. adult Kaqchikel form: *xikuch iwi'* 'you covered each other'). Nevertheless, he did not produce the reciprocal form, but he rather produced the form *iperraj* 'your (pl.) shawl' marked in genitive case and modified with the adjective *junan* 'same' (María Florencia and I covered each other with the same shawl). Ixmukane in (71b) produced *chix ka'i'* 'to you two' to indicate the reciprocity encoded in the adult Kaqchikel form *xiq'etej iwi'* 'you hugged each other'. However, she inflected absolutive case rather than ergative case. Ixmukane's inappropriate use of absolutive case is interesting because Kaqchikel monolingual Lorena also used *ix-* in two structures:

(72) a. *Yixq'etej ki'*. (3;08)

Y - ix - q'etej k - i'

INCOMPL ERG2pl hug ERG3pl RN

You (pl.) hugged them.

b. *Xixtz'ät iwi'*. (4;03)

Y - ix - 0 - tz'ät i - wi'

INCOMPL ABS2pl ERG2pl see ERG2pl REC

You (pl.) hugged each other.

In (72a), Lorena attached the ERG3pl prefix in *ki'* and in (72b) the appropriate ERG2pl prefix in *iwi'*. These inflected forms occurred eight months apart from each other. Thus, the examples from Lorena and Ixmukane are indicative of stages of development. I suggest that the fact that the patients and agents were the same caused Ixmukane and Lorena to focus on the target of the action, i.e., the patients. Moreover, the data points out at an important development in the children. During the third visit, the number of children who had started to acquire the reciprocal form *iwi'* increased slightly to 37 percent as they produced it in *xitz'ät iwi'* 'you saw each other'. Hence, the children were still in the process of acquiring the Kaqchikel structure to encode reciprocal actions; and meanwhile, they availed themselves of structures that they assumed showed these relations.

Chapter IV

Spanish Cliticization and Personal 'a' Marking

In this chapter, I turn to the issue of the acquisition of the phrase-internal structural relations between the verb and its internal argument structure in L2. In particular, I examine how well the eight bilingual children have acquired accusative case assignment and cliticization, as well as determine their different interlanguage levels and ascertain how their morphosyntactic knowledge is predicted by their lexical knowledge, which I reported in chapter two. In other words, this chapter addresses the question: could a bilingual child be predicted to have attained a high degree of competence in L2 if she/he has attained a high level of lexical competence in Spanish?

The discussion and analysis of the data in this chapter is organized as follows. In the first section, I present a brief description of the Spanish transitive verb, clitics and other relevant structures. Although the selection of methodology and participants was discussed thoroughly in chapter 1, I mention it briefly in the data section. The third section presents the general results of case marking and cliticization. The sections that follow preset analysis of the children's knowledge of Spanish cliticization in the following order: reciprocal clitics, reflexive clitics, accusative case marking with 'personal a', accusative clitics and dative clitics. I present major conclusions of this chapter in chapter V.

4.1 Spanish Clitics: What Do Kaqchikel-Maya Children Need To Know?

The typological differences between Kaqchikel and Spanish are numerous, but the essential difference is that Kaqchikel is morphologically an absolutive-ergative language and Spanish is syntactically a nominative-accusative language. The Kaqchikel transitive verb morphophonologically realizes the abstract morphosyntactic representations of the internal and external arguments internally to the verb and at the level of the phrase. In contrast, Spanish realizes morphophonologically the abstract morphosyntactic representation of the external argument (subject) in the verb's structure, while the internal argument (object) of a Spanish transitive verb is realized morphophonologically in the verb only under certain conditions. Moreover, the internal argument (object) is realized inside the VP as either a DP or a clitic. In terms of L2 acquisition, it is this difference between these two languages that I explore in this chapter. Particularly, I explore the knowledge of specific Spanish clitic paradigms by the Kaqchikel-Maya children.

Spanish has a system of clitics derived from Latin demonstrative *ille* and from strong pronouns and reflexives. The term clitic is derived from a Greek word, which means 'lean on'. Clitics are not regular pronouns since they lean on and attach to a verb due to their lack of regular or emphatic stress. That is, their phonological weakness causes them to undergo phonological word-formation and join a constituent that bears stress (Zagona 2000). Spanish clitics adjoin, under certain

conditions, to either the left or right of the verb. A clitic is said to be proclitic if it attaches to the right of the verb and enclitic if it is attached to its left. Modern Spanish generally presents more processes of enclisis than proclisis. According to Strozer (1976), Old Spanish allowed only enclisis. Turning to orthographic convention, it dictates that a proclitic sequence (clitic-verb) should be written as two separate words, while an enclitic sequence (verb-clitic) should be written as one word.

Spanish as a nominative-accusative case language, presents complete clitic paradigms for objective case and its subclasses, i.e., accusative case which corresponds to the direct object of V°, dative case which corresponds to the indirect object of V° and oblique case which corresponds to the object of P°. Table 4.1 lists the Spanish clitic paradigms for nominative, accusative and dative case. Reflexive clitics and personal pronouns are also included. Spanish does not have a complete paradigm of subject clitics, i.e., clitics in nominative case. Table 4.1 shows that *se* is the only case of clitic subjects, which may be interpreted as an unspecified human agent, e.g., *se come bien* 'one eats well'.

Turning to personal pronouns, the singular and plural second person forms vary dialectally. In Guatemala, *tú* 'you' is used in addressing close relations, intimate friends and small children. *Vos* 'you' is used more commonly than *tú* and it is also used when addressing close relations, such as family members. *Usted* 'you' is considered the formal form and it is the form most commonly used by members of all ages. *Usted* is

originally a contraction of *vuestra merced* 'your grace' (plural *vuestras mercedes* 'your graces') and as a consequence it requires the verb in third person (Ramsey and Spaulding 1956). The form *ustedes* serves as the plural for both *tú* and *usted*. Henceforth, I call the form *tú* and the clitic *te* the informal forms, and *usted* and the clitics *la/lo* the formal forms of the second person.

Table 4.1 Personal pronouns and clitics[1]

Person & Number	PRONOUNS	NOMINATIVE	ACCUSATIVE	DATIVE	REFLEXIVE
1sg	yo	Ø	me	me	me
2sg	tú vos usted	Ø	te os lo/la	te os le	te os se
3sg	él (masc.) ella (fem.)	se	lo/la	le	se
1pl	nosotros	Ø	nos	nos	nos
2pl	ustedes		los/las	les	se
3pl	ellos (masc.) ellas (fem.)	Ø	los/las	les	se

Kaqchikel-Maya children need to know that some clitics are identical across person forms and case paradigms. In the case of first person singular and plural clitics, *me* and *nos* respectively, are identical across the

[1] Hereafter, I refer to the case markers as AC (accusative), DAT (dative), and REF (reflexive), and to the person markers as follows: 1sg represents first person singular; 2sg represents second person singular; 3sg represents third person singular; 1pl represents first person plural, etc.

accusative, dative and reflexive paradigms. A similar situation occurs with the informal clitic *te* and the clitic *os*, which are identical across the accusative, dative and reflexive paradigms. Finally, the formal second person and third person clitics are identical forms in the accusative and dative case paradigms and these are accusative and masculine *lo/los*, accusative and feminine *la/las*, while the dative clitics *le/les* have no gender distinctions.

The accusative reflexive clitic paradigm shown in table 4.1 also presents an overlap with the second and third person singular clitic *se*, which does not show gender or number agreement. Furthermore, *se* is a reflexive, dative, reciprocal clitic and an allomorph of the clitic *le*. The dative clitic *le* becomes *se* if it is in proclitic position and if a third person accusative clitic follows it: *le+lo -> se lo*; for example, *se lo dí* 'I gave it to her'. Also, the first person singular and plural reflexive clitics, *me* and *nos*, and the second person reflexive clitic, *te*, are the same clitics as those in accusative and dative case.

An important characteristic of Spanish direct objects (DP's) and indirect objects (PP's) is that they may co-occur within a VP with a clitic that corresponds to it. This is known as clitic-doubling because the clitic doubles the DP or PP, resulting in a certain degree of redundancy; for instance:

(1) a. La ví a Lucía.
(I) saw-her Lucía.
b. Le dieron un libro a Lucía.
(They) gave-her a book to Lucía.
c. Lucía se peinó (a sí mísma).
Lucía combed-herself (to herself).

The 3sg accusative clitic *la* in (1a) doubles the phrase *a Lucía*, which is assigned accusative case by *a*. The marking of accusative case is referred to as personal *a* (PA) marking. Personal *a* marking assigns accusative case primarily to [+human] and [+specific] direct objects and it resembles the preposition *a* 'to' that assigns dative case. Nevertheless, it may also be used to assign case either to [+animate] objects that are nonhuman specific and individual, such as pets, or to personified animate objects (Zagona 2000).

The third person singular dative clitic *le* in (1b) doubles the phrase *a Lucía* 'to Lucía', whose *a* 'to' is the preposition that assigns dative case to *Lucía*. In (1c), the third person reflexive clitic has also a corresponding object NP in the prepositional phrase (PP) *a sí misma* 'to herself' which agrees in number and gender with the subject DP and the reflexive clitic. According to Strozer (1976), if the PP is not used emphatically, it is deleted by an object pronoun deletion rule.

In certain cases both the clitic and the DP or PP must be present. Certain direct objects (DP's) of transitive verbs that are pronominals must have their corresponding clitics. According to Strozer (1976), a pronominal DP may not occur without its corresponding

clitic, while a nonpronominal DP may occur without one; for instance:

(2) a. Vió a Marina.
(She) saw Marina.

b. *Vió a ella.
(She) saw-her.

c. La vió a ella.
(She) saw-her to her.

In (2a), the DP in direct object position is the personal noun in the phrase *a Marina*, i.e., it is a nonpronominal DP that may occur without a clitic. The DP *a ella* is a pronominal in direct object position in (2b) and it is ungrammatical because it is not doubled by a clitic. In comparison, the same DP *a ella* in (2c), which is in direct object position, is doubled by its corresponding accusative clitic *la* and the verb phrase is grammatical. Strozer (1976) proposed that pronominals such as *ella* are interpreted as generally emphatic or contrastive, and; thus, it must occur with its corresponding clitic.

Strozer (1976) classified indirect objects into two types, which she referred to as IND1 and IND2, and they differ regarding the optional occurrence of their corresponding clitics. For example, IND2 could be a nonpronominal indirect object or a pronominal indirect object that must always occur with its corresponding clitic (Strozer 1976:140):

(3) a. Lola le_i/*Ø dio la manzana a $Pablo_i$.
Lola gave the apple to Pablo.

b. Lola le_i/*Ø comió la manzana a $Pablo_i$.
Lola ate the apple on/for Pablo.

Strozer (1976) suggested that the choice of IND1 or IND2 would depend on the lexical properties of the verb in a particular construction. Furthermore, the author suggested that a major difference between IND1 and IND2 is that the latter implies a kind of 'involvement' on the part of the object (3b) and the former involves an 'ordinary goal' (3a). She proposed that verbs such as *dar* 'to give', *entregar* 'to deliver' and *hablar* 'to speak' take IND1; and verbs such as *comer* 'to eat', *lavar* 'to wash', *poner* 'to put' take an IND2.

Turning to the inflection of nouns, Spanish nouns display number and gender agreement. In terms of number inflection, they do not have a singular ending suffix, but they have two suffix allomorphs that indicate plurality. One suffix is *-es* and it attaches to nouns that end in a consonant or a glide. While, the suffix *-s* attaches to those nouns that end in a vowel. In addition, some nouns have a zero plural suffix and others are always plural; however, mass nouns are never pluralized.

With respect to gender, Spanish has a well developed system of gender distinctions for nouns. Nouns must agree with modifiers such as the determiners in (4):

(4)

	Masculine	Feminine	Gloss
-PL	el amigo	la amiga	'the friend'
+PL	los amigos	las amigas	'the friends'

Gender is partly predictable due to the phonemic clue in noun endings. As illustrated in (4) nouns that end with the suffix vowel *-o* signal masculinity and those that end with *-a* signal femininity. These nouns agree in number and gender with their corresponding modifiers. However,

it is well known that non-sexed objects do not follow this rule. According to Whitley (1986), 1% of each class has nouns with endings that do not agree with the modifier and they include everyday words; for instance:

(5)	Masculine		Feminine	
-PL	el día	'the day'	la mano	'the hand'
+PL	los días	'the days'	las manos	'the hands'

In (5), the noun *el día* ends with -a and the NP *la mano* ends with *-o*, but they do not agree with their respective modifiers regarding gender. In the plural forms, there is agreement only in number, not in gender. Things get more complicated, for there are homonymous pairs with different genders, such as *el capital* 'money' and *la capital* 'the city'. There are also pairs that end with the vowels [o] and [a], whose meaning differs, e.g., *el leño* 'timber' *la leña* 'firewood'. The number and gender system of Spanish is complex and cannot possibly be dealt in depth in this study; however, the basic aspects of this system, described here, are expected to be acquired by L2 learners, such as those who participated in this study.

In sum, Kaqchikel-Maya children need to know that clitics are phonologically dependent, but that they are morphologically independent words and syntactically independent phrasal constituents. Regardless of the morphophonological overlap of some clitics, the children also need to acquire the distinction between the accusative, dative and reflexive clitic paradigms shown on table 4.1. We will see in this chapter that this overlap has delayed some of the children's clitic acquisition, particularly that of the third person plural

clitic paradigm. The children also need to know about the co-occurrence restrictions of the DP's that clitics double, i.e., the conditions that allow clitic doubling. Finally, Kaqchikel-Maya children need to know that unlike Kaqchikel, Spanish has a robust system of number and gender distinctions for nouns and their modifiers.

4.2 The Children's Knowledge of Spanish Transitive Verbs

The children observed and interpreted the drawings (see appendix E) and events presented to them, and provided representative verb phrases (VPs), which are listed in appendix G. However, this section presents a discussion and analysis only of the Spanish verbs that the children produced and not of the entire VPs. In terms of verb production, the children mostly supplied the verbs that were expected and those verbs that were provided, but not expected were labeled as acceptable 'replacements' only if their subcategorization and argument structures conformed to those of a transitive verb. The children produced verb forms that were ungrammatical because of the lack of knowledge of the pragmatical restrictions of Spanish. They also produced verb forms that were products of transference and individual creativity.

We elicited the description of drawings and events acted out along with the children or for the children that resulted in 76 verb phrases whose verb inflections were based on 18 transitive verbs. Some verbs and their VPs were excluded in this chapter because there was no cliticization or PA marking in them, e.g., *pelar* 'to peel', *arrancar* 'to pull out', *romper* 'to break'. Furthermore, Kaqchikel and Spanish do not have the same

number of equivalent verbs in certain verb classes. For instance, the class of cutting verbs in Kaqchikel is larger than in Spanish since Kaqchikel specifies the type of object that is cut (e.g., glass, paper, eggs, or tree branches) or the instrument that is used to cut the object with (e.g., hands, scissors, or sharp instrument). Although the number of Spanish equivalent verbs in each class differed from those in Kaqchikel, they were grouped into the same verb classes as in Kaqchikel.

Table 4.2 lists 18 verbs which include one cutting verb, eight tidying and cleaning verbs, five affection verbs, three physical force verbs and one eating verb. The verb *ver* 'to see' was not included in table 4.2, because it was part of indirect input. That is, the verb was mentioned in some of the instructions that were given to the children, e.g., look at Marina.

In all the tables of this chapter, as well as in the previous chapters, the children's names are indicated with first name initials and their ages with ordinal numbers in subscript: Ervin (E_9), Säqche' (S_8), Tojil (T_9), Yaxum (Y_8) and Kot (K_8). The second name initials are used to indicate of María Angélica (A_9), and third letter of first names are used to indicate Ixb'alam (B_9) and Ixmukane (M_{10}). The categories in table (4.2) are organized as follows: (I) appropriate verbs, (II) replacements, (III) transferred verb forms, (IV) self-created verbs and (V) pragmatically odd verbs. The children's results are rank-listed according to the number of years that each child had been in school. María Angélica, Ervin and Säqche' had been in school two

years. Kot and Yaxum had been in school three years; Tojil and Ixb'alam four years; and Ixmukane five yeas.

Table 4.2 Percentages for Spanish verbs

	A_9		E_9		S_8		K_8		Y_8		T_9		B_9		M_{10}	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
I	9	50	6	33	12	67	11	61	14	78	13	72	13	72	13	72
II	8	44	9	50	4	22	6	33	4	22	4	22	2	11	5	28
III	1	6	3	18	1	6	-	-	-	-	-	-	2	11	-	-
IV	-	-	-	-	1	6	-	-	-	-	1	6	1	6	-	-
V	-	-	-	-	-	-	1	6	-	-	-	-	-	-	-	-

The group's average in the production and acquisition of Spanish transitive verbs was 62 percent. Ervin (E) and María Angélica (A) knew the least number of verbs, made the most replacements and transferred certain verbs from L1 to L2. These two children and Säqche' (S) had only been schooled for two years; however, Säqche' knew more verbs than Kot who had been in school three years. In addition, Yaxum, Tojil, Ixb'alam and Ixmukane had been in school longer and produced the most verbs. Ixmukane (M) was the only child who did not transfer, create, or demonstrate incorrect usage of a verb. Category III on the table shows that half of the children transferred from L1 to L2. This finding suggests that they relied on Kaqchikel for their production of Spanish verbs and that their interlanguage levels were not that advanced. In what follows, I present a discussion of those verbs that demonstrate lexical development or L1 transference.

Of the eight verbs that were grouped in the tidying and cleaning verb class, the verb *limpiar* 'to clean' and *lavar* 'to wash' were most commonly used to replace other

cleaning verbs. Evidently, these two verbs are completely general and have a wide range of applications. Some children used the verb *limpiar* to replace more specific verbs, such as *secar* 'to dry', *lavar* 'to wash' and *cepillar* 'to brush (teeth)'. Moreover, some of the children also used the verb *lavar* to replace *cepillar* 'to brush' and *bañar* 'to bathe'. These results suggest that verbs are acquired in developmental stages. That is, L2 learners acquire general or generic verbs first and latter acquire more action specific verbs.

The Spanish tidying verb *trenzar* 'to braid' presented more variation among the children's responses. Thirty-seven percent of the group replaced it with the more general verb *peinar* 'to comb', while another 37 percent replaced it with the verbs that they used during the Kaqchikel task, i.e., they provided an equivalent form of Kaqchikel *-b'än rutzil* 'to fix' during the Spanish task. This verbal structure is what the children transferred to L2, resulting in VP's with Spanish *arreglar* 'to fix' and *componer* 'to repair/fix'. Even though these Spanish verbs are transitive, their use was clearly pragmatically unacceptable since the children were asked to describe drawings of women braiding the hair of others, not fixing hairdos. Interestingly, all the children who transferred from L1 to L2 were boys. The fact that the event involved women, and an action that women particularly carry out, may explain why the boys did not know the verb to braid in either language, i.e. braiding hair is not part of their direct experience.

Equivalence from Kaqchikel to Spanish is not always one-to-one; this is the case with the Kaqchikel verb stem *-elesaj* 'to take off/out', which has two Spanish equivalent verbs: the verb *quitar* 'to take off' and the verb *sacar* 'to take out'. The verb *quitar* was expected, but some children (37%) provided the verb *sacar* instead. However, the verb *sacar* was not pragmatically appropriate since in Spanish this verb is reserved for events in which an object is taken out of a compartment or enclosed space. The children who provided the verb *sacar* 'to take out' transferred the functions of the Kaqchikel verb *-elesaj*. This is more evident in the case of Ervin and Ixb'alam, who alternated their use of both verbs *quitar* and *sacar*. On the other hand, María Angélica used only the verb *sacar*. Apparently, these children hypothesized incorrectly that, like Kaqchikel, the Spanish verb *sacar* can be used to talk about events that involve the actions of taking off or taking out something.

Five Spanish verbs were grouped as affection verbs, although for two of them, *tocar* 'to touch' and *tapar* 'to cover up', this label might be a somewhat ad hoc; they are labeled as such because we, the interviewers, demonstrated affection when we carried out the actions represented by these verbs. Of these verbs, the verb *acariciar* 'to caress' was produced by only 25 percent of the group. The rest of the group replaced it with 6 different verbs, e.g., *tocar* 'to touch', *agarrar* 'to grab', *suavizar* 'to soften' and *cariñando,* which is a Spanish nonexistent verb that was created and derived from the noun *cariño* 'endearment'. I suggest that the explanation for the children to have provided six

different verbs to replace the verb *acariciar* 'to caress' is not only that they have not learned this verb, but also most importantly that Kaqchikel does not have an equivalent for the Spanish verb *acariciar*. The semantically closest verb is *-chop* 'to touch/grab' and this explains why some children used *tocar* and *agarrar*, not knowing that they are semantically and pragmatically different.

Only 12 percent of the children produced a correct form of the verb *columpiar* 'to swing oneself/someone on a swing', which was grouped in the physical force category. The rest of the group produced instead the Spanish verb *empujar* 'to push', which is equivalent to the Kaqchikel verb *-nïm* 'to push' and this verb was produced by most of children during the Kaqchikel task. It was pointed out in chapter III that the closest Kaqchikel equivalent to Spanish *columpiar* is the intransitive verb *-kotin* 'to swing', but was hardly produced by the children. Instead, 37 percent of the children produced the mixed verb *nub'än columpiar* 'to make swing oneself/someone on a swing' during the Kaqchikel task. This is what is most interesting about the replacements provided for the verb *columpiar*. That is, the children produced it during the Kaqchikel task in the mixed verb *nub'än columpiar*, but did not produce *columpiar* during the Spanish task. They produced *empujar* 'to push' a verb that is more general, but that has clearly transitive properties.

I suggest that those children who used the verb *columpiar* as intransitive had not consolidated their knowledge of its intransitive and transitive properties. Moreover, I propose that the intransitive properties of

the Kaqchikel equivalent verb *-kotin* 'to swing' interfered in the children's acquisition of the Spanish verb *columpiar* as a transitive verb. For instance a child produced it as an intransitive verb in the following: *él está empujando a la niñita para que ella se columpie* 'he is pushing the little girl so that she swings herself'. The verb form *se columpie* 'swings herself' was used as an intransitive or reflexive verb, while *empujando* 'pushing' was used as a transitive verb. The intransitive property of *se columpie* 'swings herself' resembles that of the intransitive Kaqchikel verb *-kotin*. Thus, this example supports my suggestion that the intransitivity of the Kaqchikel verb *-kotin* delayed the children's acquisition of the Spanish verb *columpiar*.

In the physical force verb category, the children had not yet acquired the verbs patear 'to kick' and derribar 'to knock down' since 25 percent of them produced *patear* and none produced *derribar*. Half of the group produced the ditransitive verb *dar* 'to give' along with the noun *una patada* 'a kick' in VPs such as in *dió una patada* '(he) gave a kick'. The rest of the children provided the verb *pegar* 'to hit', which is less specific than *patear*. An interesting aspect of these results is that the Spanish VPs were identical to the Kaqchikel VPs so that the VPs in Spanish seemed to be direct translations.

(6)

	Kaqchikel		Spanish
a.	nuya' aqän	->	da una patada
	'(he) gives a kick'		'(he) gives a kick'
b.	nuch'ey ri tz'i	->	está pegando al chucho
	'(he) hits the dog'		'(he) is hitting the dog'

The examples in (6) show how some children based their L2 on L1. Another interesting aspect of the results regarding the verb *patear* 'to kick' is that by the third visit, 50 percent of the group produced the verb *patear*, which suggests that they had acquired this verb and had stopped using their L1 as a basis for the production of L2. Hence, the data on this verb show that the children underwent lexical and morphosyntactic development.

Finally, not one of the children produced the transitive verb *alimentar* 'to feed' in the eating category. All of them produced the ditransitive verb *dar* 'to give', which indicated that this verb had not yet been acquired. Thus, I considered the verb *dar* as the correct verb, rather than a replacement.

Table 4.3 presents the results for each child with respect to the 70 acceptable verb tokens that they produced. However, the results for María Angélica and Kot are based on the 59 tokens that they produced during the first and second visits; they could not be recorded during the third visit. The labels used to classify the verbs are the same as those on table 4.2 and the total includes only the appropriate verbs (I) and the replacements (II).

Table 4.3 Total percentages on Spanish verb production

	A9		E9		S8		K8		Y8		T9		B9		M10	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
I	36	80	42	60	57	81	40	68	61	87	61	87	56	80	56	80
II	14	27	24	34	9	13	16	27	9	13	8	11	10	14	14	20
III	9	12	4	6	2	3	1	2	-	-	-	-	3	4	-	-
IV	-	-	-	-	2	3	-	-	-	-	1	2	1	2	-	-
V	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-
TTL	50	71	66	94	66	94	56	94	70	100	69	99	66	94	70	100

Generally, the group's verb knowledge coincided with the number of years spent in school; for example, Yaxum and Tojil produced the most tokens, i.e., 61. Yaxum had been in school three years and Tojil four years. Also, Ixb'alam and Ixmukane produced almost as many tokens, i.e., 56, as Yaxum and Tojil. Although Ixb'alam had been in school four years and Ixmukane five years. An important difference between these four children is that Ixmukane, Tojil and Yaxum is that they did not transfer from L1 to L2, while Ixb'alam did (see category III). In comparison, María Angélica, Ervin and Säqche' who had been in school two years transferred from L1 to L2. Kot also transferred from L1 to L2 and produced pragmatically odd verbs, although he had been in school three years. María Angélica also made the most replacements and Säqche' created verbs to compensate for lexical gaps.

In sum, these Kaqchikel-Maya children had the task of acquiring and determining the lexical equivalence between Kaqchikel and Spanish verbs and this included the matching of semantic, subcategorization and pragmatic properties of the potential equivalent verbs. In this sense, they must distinguish between true and false

equivalents; for instance, the Kaqchikel verb root *-kotin* 'to swing on swing' can not have as a syntactic equivalent the Spanish verb *columpiar* 'to swing oneself/someone on a swing' because their subcategorization properties do not match. That is, the verb *-kotin* has intransitive properties and the verb *columpiar* has transitive and reflexive properties. The subcategorization conflict between these two seemingly equivalent verbs has had delaying effects on the acquisition of the verb *columpiar*. Moreover, verbs that seem equivalent in their subcategorization frames may not be equivalent in terms of their semantic and pragmatic properties. For instance, some children erroneously hypothesized that *sacar* and *quitar* were interchangeable; they had the same semantic and pragmatic properties of the Kaqchikel equivalent *-elesaj* 'to take off/out'.

The results demonstrated developmental stages in terms of the acquisition of specific verbs and in terms of the types of verbs that are acquired first. In the first instance, half of the children had not yet acquired the verb *patear* 'to kick', but they had acquired it by the third visit. In the second instance, these L2 learners seemed to acquire the more general verbs first and more specific verbs later. The verbs *limpiar* 'to clean' and *lavar* 'to wash' were acquired first and were used to replace other more specific verbs that they had not acquired yet. In other words, the children used generic verbs because they were still in process of acquiring the more specific ones.

Finally, pragmatic factors were involved in the acquisition of specific verbs. That is, direct

experiences were shown to be important in the acquisition and production of specific verbs; for example, Kaqchikel-Maya mothers braid their daughters' hair, but not their sons' hair. Most of the boys (37%) used Spanish *arreglar/componer* 'to fix', which was transferred from the Kaqchikel *-b'än rutzil* 'to fix' to replace the verb *trenzar* 'to braid' which they did not know. Thus, the children demonstrated that their lack of direct experience with the action of braiding hair had prevented them from acquiring the verb in Kaqchikel and Spanish.

4.3 Accusative Case Marking and Cliticization

In this section, I discuss and analyze the children's data on accusative case marking and cliticization; these data are listed in appendix G. Table 4.4 is organized in the same manner as table 4.2. The children's results are rank-listed starting from the children with the least years in school and ending with the child who had been in school the most years. The percentages of Kot and María Angélica were based on 59 tokens, which they produced during the first and second visit, while the percentages for the rest of the children are based on 76 tokens. I analyzed 574 structures to determine levels of knowledge regarding accusative case marking and cliticization. The results of the different case and clitic paradigms are labeled and organized in roman numerals as follows: (I) reciprocal clitics, (II) reflexive clitics, (III) accusative case or PA marking, (IV) accusative clitics and (V) dative clitics.

Table 4.4 Accusative case marking and cliticization

	No.	A_9	E_9	S_8	K_8	Y_8	T_9	B_9	M_{10}
	Tokens	%	%	%	%	%	%	%	%
I	3	100	67	100	100	100	67	100	100
II	20	19	30	75	81	80	75	100	100
III	16	21	44	44	43	87	75	44	56
IV	14	100	71	57	100	36	64	79	93
V	23	30	30	48	78	74	61	83	87

The children show considerable variation in the their acquisition of accusative, reflexive and dative clitics. As a group, the children produced more reflexive and accusative clitics than dative clitics and accusative case marking (personal 'a' marking). Table 4.4 reveals a considerable increase in the percentages of reflexive and dative clitics, i.e., 61% average increase. The results demonstrate generally that those children with more years of schooling produced more clitics in the required grammatical contexts. In other words, the more exposure to Spanish schooling increased the child's production of cliticization. In what follows, I discuss and analyze the children's acquisition of Spanish PA marking and clitic paradigms and correlate them to what I call beginning, intermediate and advanced interlanguage levels. Each category is discussed in the same order as they were presented on table 4.4.

4.3.1 Reciprocal Clitic

Of the reciprocal clitic paradigm, only the 2pl reciprocal clitic *se* was elicited, which most of the children were able to produce in all of the required

contexts; the group's average was 91 percent. The following discussion focuses on Ervin and Tojil whose total percentage on this category was 67 percent and on other data, which illuminate the children's knowledge of this clitic.

All the children, including Ervin and Tojil, described an acted-out event in which María Florencia and I covered each other with a shawl. The structure that describes this event in adult Spanish is *se tapan con el perraje* '(you) cover each other with the shawl' where the 2pl reciprocal clitic *se* is in preverbal position and the PP *con el perraje* 'with the shawl' follows the verb. Ervin and Tojil produced the following structures:

(7) a. Usaron el perra(je).
Usar - on el perra(je).
use 2plPAST the shawl
(You) used the shawl.

b. ?Agarraron un un perraje y se lo pusieron a los dos.
Agarr - aron un un perraje
grab 2plPAST a a shawl
y se lo pon - ieron a los dos
and 2plRECL 3sgACL put 2plPAST to the two
(You) grabbed a, a shawl and put it on to the two of them.

The structures in (7a-b) do not resemble the adult Spanish structure *se tapan con el perraje* not only because the verbs are different, but also because the reciprocal nature of the action is not conveyed with the obligatory clitic *se*. Ervin in (7a) produced the verb *usar* 'to use' in past tense and did not cliticize *se*.

Note that he dropped the last syllable of the noun *perraje* 'shawl'. In (7b), Tojil produced the 3pl dative clitic *se*, which resembles the expected 2pl reciprocal clitic *se*. However, the PA marked phrase *a los dos* doubles the clitic *se*, which results in ambiguity because it could indicate 3pl or 2pl. Moreover, Tojil misused the plural masculine determiner *los* 'the', i.e., he did not provide the plural feminine determiner *las* 'the'. Thus, these children did not succeed at cliticizing the 2pl reciprocal clitic *se* and their resulting structures conveyed meanings that did not accurately describe the event that they observed. However, these children produced it in the other required contexts.

Säqche' was the only child who on more than one occasion transferred structures directly from Kaqchikel. The example in (8) shows that he produced a Kaqchikel structure first, but he succeeded on his third attempt at producing the Spanish structure *se abrazan* '(you) hug each other'.

(8) Xaq'etej. La abrazaste. Se están abrazando.

X	-	Ø	-	a	-	q'etej	La		
COMPL		ABS3sg		ERG2sg		hug	3sgACL		
abraz	-	aste		se		est - án	abraz	-	ando
hug		2sgPAST		2plREC		be 2plPRES	hug		PROG

You hugged her. (You) hugged her.

You hugged each other.

Säqche' based his initial description of the event entirely in Kaqchikel. Furthermore, he erroneously focused his description on only one agent of the action. After his first attempt, he produced a Spanish structure that shows transitive properties, but not reciprocal

ones. On his third attempt, he produced the expected Spanish structure, but only after we, the interviewers, acted-out the event once more. Thus, Säqche' repaired his first Spanish structure by correctly producing the verb in plural form and cliticized the 2pl reciprocal clitic *se*.

Interestingly, some of the children who produced the expected reciprocal clitic overtly produced the external argument *ustedes* 'you'. I suggest that their intent was to disambiguate the meaning of the structures because, without knowing the pragmatics of the structures, the external arguments of (9a-b) could be interpreted to mean *they saw each other* and *they hugged each other*.

(9) a. Se vieron, ustedes.

Se	v	-	ieron	ustedes
2plREC	see		2plPAST	you (pl)

Saw each other, you.

b. Ustedes dos se miraron.

Ustedes	dos	se	mirar	-	on
You (pl)	two	2plREC	see		2plPAST

You two saw each other.

Ixmukane adjoined the external argument *ustedes* 'you' to the right of the verb in (9a), which is the non-topic position of the external argument in Kaqchikel. In comparison, Ervin positioned the external argument in preverbal position in (9b). Interestingly, Ervin qualified the external argument with the numeral dos 'two', which is what half of the children did in the Kaqchikel version of (9b). Thus, it seems that Ervin transferred *ustedes dos* 'you two' from his Kaqchikel

structure *rix ix ka'i' xitz'ët ipaläj* 'you two, you saw each other's faces'.

In sum, except for Ervin and Tojil, the children were able to produce all tokens of the 2pl reciprocal clitic *se*. These two children had difficulty with only one of the required structures. In addition, Säqche' demonstrated that although he produced the required clitics, he was constructing his Spanish based on his L1.

4.3.2 Reflexive Clitics

The data demonstrate that some children transferred from L1 to L2 and that as a group, the children acquired reflexive clitics from verb to verb, rather than cliticizing them across the verb paradigms that we elicited. This transference from L1 to L2 involved Kaqchikel verbs that are transitive, but which have reflexive properties in Spanish, i.e., the Spanish equivalent verb structures require reflexive cliticization. Thus, in order to acquire the Spanish reflexive clitic system is crucial that Kaqchikel-Maya children, such as the ones in this study, discover the reflexive properties of Spanish verbs *vis à vis* Kaqchikel verbs.

The data also demonstrate that the children knowledge of reflexive clitics varied and could be placed at different interlanguage levels, which for some of them corresponded to the number of school years. I have placed the children's knowledge at the beginning, intermediate and advanced levels. Ervin and María Angélica were placed at the beginning interlanguage level and their average score was 24 percent. Tojil, Yaxum,

Kot and Säqche' were placed at the intermediate level and they scored an average of 78 percent. Ixmukane and Ixb'alam were representative of the advanced interlanguage level with an average one hundred percent. The following discussion mostly focuses on the children from the beginning and intermediate levels.

These children demonstrated development in the acquisition of reflexive clitics from one visit to the next. Specifically, they showed development in the acquisition of the 3sg reflexive clitic *se* 'her/himself' with the verb *poner* 'to put on'. During the first visit, I elicited this verb as well as the verb *cepillar* 'to brush'. All of the intermediate children cliticized *se* with the verb *cepillar*, but they did not cliticize it with the verb *poner*. Interestingly, during the second visit the children cliticized *se* with the verb *poner*, except for Yaxum. In comparison, the beginning children did not produce this clitic with either verb. These data suggest that the children were still sorting out the transitive properties of the verb *poner* 'to put on', which unlike the verb *cepillar* 'to brush' may also have locative properties, e.g., *pone el calcetín en la cama* '(he) puts the sock on the bed'. Thus, the verb *cepillar* 'to brush' may be easier to acquire since it has fewer morphosyntactic properties than the verb *poner* 'to put on' does.

María Angélica demonstrated some development in the acquisition of *se* 'her/himself', but only with the verb *cambiar* 'to change', which she used to replace the expected *poner* 'to put on'. The structure that she produced in (10a) is missing the clitic *se* 'himself' and

the auxiliary *está* 'is' (cf. adult Spanish *se está poniendo el calcetín* '(he) is putting on the sock himself'). In addition, she transferred from Kaqchikel the requirement of marking the DP with genitive case. That is, she used the possessive pronoun *su* 'his' rather than the determiner *el* 'the'.

(10) a. *Poniendo su calcetín.

Pon - iendo su calcetín

put on PROG his sock

(He) (is) putting on his sock.

b. Se está cambiando.

Se est - á camb - iando

3sgREFC be 3sgPRES change PROG

(He) is changing himself.

María Angélica cliticized *se* in (10b) during the second visit, i.e., two months later. However, she only produced two tokens of this clitic during the second visit, which shows that she was only beginning to acquire it and was discerning between the properties of transitivity and reflexivity for individual verbs. She cliticized *se* with the verb *cambiar* 'to change', but not with the verb *cepillar* 'to brush'.

(11) *Está cepillando a su diente.

Est - á cepill - ando a su diente

be 3sgPRES brush PROG PA his tooth

(He) is brushing to his tooth.

(Cf. adult Spanish: se está cepillando los dientes '(he) is brushing his teeth'.)

The structure in (11) is ungrammatical because the reflexive 3sg clitic *se* was not produced and the direct object was assigned accusative case with the personal 'a'

marker (PA), which may not be used to assign accusative case to an inanimate object. María Angélica hypothesized that the properties of the verb *cepillar* 'to brush' were the same as those of the transitive Kaqchikel equivalent verb *-chäj* 'to wash'. Thus, she transferred the Kaqchikel equivalent construction onto her Spanish, which resulted in an ungrammatical VP. Furthermore, María Angélica, again, assigned genitive case to the direct object *su diente* 'his tooth', which is another case of transference since the Kaqchikel equivalent *rey* 'his teeth' in *nuch'äj rey* 'he washes his teeth' is obligatorily marked in genitive case. Spanish and Kaqchikel do not resemble each other since in Kaqchikel the grammatical construction is literally *he washes his teeth*, while in Spanish, the grammatical construction is literally *he washes the teeth himself*.

Ervin, who was also at the beginning interlanguage level, did not cliticize *se* 'himself' with the verbs *poner* 'to put' and *cepillar* 'to brush' during either the first or the second visit. The example in (12) shows that Ervin did not produce the obligatory reflexive clitic, but assigned genitive case to the direct object by using Spanish *sus* 'his'; this was pervasive feature of his constructions.

(12) *Está lavando sus diente.

Est - á	lav -	ando	sus	diente	
be	3sgPRES	wash	PROG	his	tooth

(He) is washing his tooth.

Interestingly, he did not mark plurality on the head of the phrase, *diente* 'tooth', which resulted in number disagreement (cf. adult form *sus dientes* 'his teeth').

In Spanish, the noun, or head of the DP, must spread its number and gender to its inflected modifiers. This is a morphosyntactic feature of Spanish that Ervin, as well as other children, had not fully acquired. Generally, the children as a group did not inflect systematically gender and number agreement on nouns and their modifiers. This suggests that they transferred the non-plurality and non-gender features of most Kaqchikel nouns onto their L2. This transference was more persistent with some of the children. For instance, in (13), Tojil and Kot produced forms similar to that of Ervin in (12):

(13) Adult Spanish

los dientes 'the teeth' ->	*sus diente	Tojil
l - o - s dientes	*los liente	Kot
Det masc pl teeth		

Tojil produced *sus diente*, in which the specifier *sus* 'his' is in genitive case and the noun *diente* 'tooth' lacks the plural suffix *-s*. This structure is ungrammatical because *diente* does not agree in number with the possessive determiner *sus*. In contrast, Kot did produce the expected non-genitive specifier *los*, but he did not pluralize *diente* either. Thus, unsystematic number and gender agreement, and genitive case marking of direct objects was typical of the children's structures, particularly those in the beginning and intermediate levels.

Interestingly, some data from María Angélica and Ervin suggests that they had acquired first the 2pl reflexive clitic *se* 'yourselves', but not the singular counterpart the reflexive clitic *se* 'yourself. When comparing (14) to the adult Spanish structure: *se ponen*

los suéteres '(you (pl.)) put on the sweaters yourselves', it can be observed that these two children produced the expected 2pl reflexive clitic *se* 'yourselves'. María Angélica produced the structure in (14a) and in it she cliticized *se* 'yourselves'. However, the ungrammaticality of the structure is due to the absence of the 3sg accusative clitic *lo* that corresponds to the direct object *su suéter* 'your sweater' which she did not include in her structure. Moreover, she did not inflect the verb accurately (cf. adult Spanish *pusieron* '(you) put').

(14) a. *Se ponieron.

Se pon - ieron

2plREFC put 2plPAST

(You) put on ____.

b. Ustedes se lo ponen su suéter

Ustedes se lo pon - en su suéter

You 2plREFC 3sgACL put 2plPRES your sweater

You put it on your sweater on yourselves.

In (14b), Ervin cliticized the expected clitic *se* 'yourselves', as well as the clitic *lo*. He also included the direct object *su suéter* 'her sweater', but which again was assigned genitive case.

I suggest that the resemblance between the 2pl reflexive clitic *se* 'yourselves' and its singular counterpart *se* 'yourself' is an impediment for their simultaneous acquisition. Notably, this was the case of María Angélica and Ervin, who during the second visit, did not produce the 2sg reflexive clitic *se* 'yourself' when they were asked to describe an event in which I acted-out taking off my sweater. The resulting

structures were ungrammatical because they did include the clitic *se* 'yourself' and they did not describe the event accurately. Compare the ungrammatical structures listed in (15) with the adult Spanish form: *se quitó el suéter* '(you) took off the sweater yourself'.

(15) a. *Sacó su suéter.

Sac	-	ó	su	suéter
take out		2sgPAST	your	sweater

(You) took out your sweater.

b. *Sacaste tu blusa.

Sac	-	aste	tu	blusa
take out		2sgPAST	your	blouse

(You) took out your blouse.

Both children produced erroneously the verb *sacar* 'to take out', but most importantly they did not cliticize the 2sg formal reflexive clitic *se* 'yourself'. In (15a), María Angélica used the 2sg formal form of the verb *sacar* 'to take out', while Ervin chose used the informal form of the same verb. These verbal forms required different clitics, the 2sg formal reflexive clitic *se* 'yourself' and the informal clitic *te*. Neither child produced these clitics. Eight months later, during the third visit, I elicited the same person clitic in the following:

(16) Se peinó.

Se	pein	-	ó
2sgREFC	comb		2sgPAST

(You) combed yourself.

Ervin produced (16), which is identical to the adult Spanish form *se peinó* '(you) combed yourself'. This shows his development in the acquisition of the clitic *se* 'yourself'. In the case of María Angélica, there is no

datum for this example, since during my third visit, I was not able to record her in Spanish. Thus, one of the two children in the beginning group provided evidence of development in the acquisition of 2sg reflexive clitic *se* 'yourself' from the first to the third visit.

The development of the acquisition of reflexives can also be documented in the case of Ervin with regard to the 1sg reflexive clitic *me* 'myself'. This clitic was elicited during the first and second visits. Neither Ervin nor María Angélica cliticized *me* during the second visit, but during the third visit, Ervin produced it. The following examples show the development of the acquisition of the reflexive clitic *me* 'myself'.

(17) a. *Lavo mi cara.

Sac	-	ó	su	suéter
take out		2sgPAST	your	sweater

(You) took out your sweater.

b. Me peiné.

Sac	-	aste	tu	blusa
take out		2sgPAST	your	blouse

(You) took out your blouse.

The adult Spanish version of (17a) is *me lavo la cara* '(I) *wash the face myself*'; this structure was elicited during the second visit. Both María Angélica and Ervin produced the ungrammatical structure listed in (17a). The ungrammaticality of (17a) resides in the lack of cliticization of *me* 'myself' and in that, the children assigned, again, genitive case to the DP.

Ervin's production of *me* 'myself' improved during the third visit. In (17b), he cliticized *me* in preverbal position, which duplicates the expected adult

construction, *me peiné* '(I) combed myself'. Evidently, Ervin made progress in the acquisition of some reflexive clitics and not others because he still had not acquired either the 3sg reflexive clitic *se* 'her/himself', or the 3pl reflexive clitic *se* 'themselves' during the third visit. The examples in (18) show that *se* 'her/himself' was not cliticized.

(18) a. El niño está bañando.

El niño est - á bañ - ando

The boy be 3sgPRES bathe PROG

The boy is bathing.

b. Bañando.

Bañ - ando

bathe PROG

Bathing

Comparing Ervin's example in (18a) with the adult Spanish form *él niño se está bañando* 'the boy is bathing himself', it can be observed that Ervin did not cliticize *se* 'himself'. Nor did he cliticize *se* 'themselves' in (18b) (cf. adult Spanish *se están bañando* 'they are bathing themselves'). Except for Ervin, all the other five children, whom I recorded during the third visit, produced these clitics. Moreover, the data in (10), (11) and (12) show that some of the children were in the process of acquiring the 3sg reflexive clitic. Thus, these data suggest that the 3sg and 3pl reflexive clitics might be the last clitics that L2 learners acquire.

Kot, Yaxum, Säqche' and Tojil, who were at the intermediate interlanguage level, showed that their acquisition of the reflexive clitic *se* 'her/himself' was also in progress. They were inconsistent at cliticizing

it with certain verbs, or did not cliticize it at all with other verbs that I elicited throughout my visits. As it has been shown, there was inconsistency at cliticizing reflexive clitics on the verbs *poner* 'to put on' and *cepillar* 'to brush'. In what follows, I discuss and analyze the use of the verbs *secar* 'to dry off', *lavar* 'to wash' and *cortar* 'to cut' by the intermediate level children to document situations of inconsistent and zero cliticization.

Yaxum and Tojil produced cliticization inconsistently; for example, they did not cliticize the reflexive clitic *se* 'her/himself' with the verb *cortar* 'to cut', which was elicited during the second visit. Yaxum produced the structures in (19). Interestingly, those that Tojil produced are very similar to those of Yaxum. The structure in (19a) can be compared to the adult Spanish structure *Juanito se corta las uñas* 'Juanito cuts the nails himself'. It can be observed that the *se* 'her/himself' was produced postverbally; although the copula *está* 'is' which indicates tense and person was not produced.

(19) a. Cortandose las uñas.
cort - ando - se las uñas
cut PROG 3sgREF the nails
(He) (is) cutting the nails himself.

b. *El señor está cortando su pelo.
El señor est - á cort - ando su pelo
The man be 3sgPRES cut PROG his hair
The man is cutting his hair.

In (19b), Yaxum did the reverse; he did not cliticize *se*, but included the copula (cf. adult Spanish *el barbero se*

corta el pelo 'the barber cuts the hair himself'). Moreover, Yaxum produced the DP subject and marked the direct object *el pelo* 'the hair' in genitive case, i.e., *su pelo* 'his hair'. Interestingly, the beginning level children and the intermediate level children (50% of the group) who did not cliticize *se* 'himself' produced genitive case DP's. That is, they produced *su pelo* 'his hair' and not the expected DP *el pelo* 'the hair' as if they were compensating for their lack of cliticization. Tojil produced essentially the same structures as Yaxum. He cliticized *se* 'himself' in the first structure, but not in the second. The children's cliticization of *se* 'himself' with the verb *cortar* 'to cut' in (19a), but not in (19b) demonstrates that they had not yet consolidated their acquisition of this clitic. Moreover, the fact that the class of cutting verbs in Kaqchikel specifies the type of object that is cut, as well as the cutting instrument may be an impediment in the acquisition of the reflexive clitic *se* 'her/himself' for Kaqchikel employs different verbs for the actions of cutting hair and cutting nails.

In regards to the children at the advanced interlanguage level and the Spanish verb *cortar* 'to cut', there was a clear difference between them and those children at the beginning and intermediate level. Ixb'alam and Ixmukane produced the expected constructions; they produced reflexive cliticization with *se* 'her/himself', as well as produced more elaborate sentences, for instance:

(20) a. El peluquero se está cortando su pelo.

El peluquero se est - á

The barber 3sgREF be 3sgPRES

cort - ando su pelo

cut PROG his hair

The barber is cutting the hair.

b. Un señor se está cortando el pelo.

Un señor se est - á

A man 3sgREF be 3sgPRES

cort - ando el pelo

cut PROG el hair

A man is cutting the hair.

In (20a), Ixb'alam cliticized the 3sg reflexive clitic *se*, as well as marked the direct object in genitive case. These two constructions were representative of her interlanguage level. In other words, she acquired the appropriate reflexive properties for the verb, but still maintained the Kaqchikel requirement of marking the direct object in genitive case in her Spanish construction. In comparison, Ixmukane, who had been in school the longest, appropriately cliticized the verb with *se* in (20b). She also followed the requirement of Spanish, i.e., she did not mark the direct object in genitive case. Even though these two children were placed at the advanced interlanguage level, clearly Ixmukane was more advanced. She did not transfer from L1 to L2 and produced a structure that met all the requirements of the Spanish system.

The verb *lavar* 'to wash' was the verb on which the children hardly cliticized the 3sg reflexive clitic *se*. Only Ixmukane and Kot used this reflexive clitic

consistently in the two adult Spanish constructions *la niña se lava las manos* 'the girl washes her hands herself' and *ella se lava la cara* 'she washes her face herself'. Yaxum produced only one token (12%) and the other children did not use the reflexive clitic *se* at all. Moreover, Säqche' and María Angélica misused accusative and dative clitics, for instance:

(21) a. *Le está lavando la mano.

Le est - á lav - ando la mano
3sgDCL be 3sgPRES wash PROG the hand
(He) is washing the hand for him.

b. *Lo está lavando su cara.

Lo est - á lav - ando su cara
3sgACL be 3sgPRES wash PROG his face
(He) is washing him his face.

Although Säqche' was describing a reflexive action, he produced the 3sg dative clitic *le* 'to him' rather than *se* 'herself' in (21a); thus, the construction is ungrammatical. In comparison, María Angélica in (21b) cliticized the 3sg accusative clitic *lo* 'him' and assigned genitive case to the direct object. It is possible that María Angélica interpreted the drawing of the woman washing her face in front of a mirror as two women. Remarkably, Ervin produced *le está limpiando la cara a la mamá* '(she) is washing the face to the mother' where he clearly interpreted this drawing as having two women. Nevertheless, Ervin's structure and those in (21) were considered ungrammatical. On the whole, it is striking that 62 percent of the group did not cliticize *se* in *ella se lava la cara* 'she washes her face herself' and 50 percent did not cliticize *se* in *la niña se lava*

las manos 'the girl washes her hands herself'. I suggest that the children transferred the properties of the Kaqchikel verb root *-ch'äj* 'to wash' onto the Spanish verb *lavar* 'to wash'; they had yet to acquire the reflexive properties of this Spanish verb.

Turning to Kot and Yaxum, who were at the intermediate level, they produced errors with the verbs *quitar* 'to take off' and *poner* 'to put on'. One example is provided for each child in (22). Kot in (22a) produced the 2pl reflexive clitic *se* 'yourselves' twice. First, he cliticized *se* in preverbal position, and second, he attached it to the verb, which he produced in progressive form. However, having the clitic *se* 'yourselves' repeated twice resulted in a redundant and ungrammatical structure (cf. adult Spanish: *Se están quitando el suéter* or *están quitandose el suéter* '(you) are taking off the sweater yourselves)'.

(22) a. Se están quitandose el suéter.
Se est - án quit - ando - se
REF2pl be PRES2pl take-off PROG REF2pl
el suéter
the sweater
(You) are taking off the sweater yourselves.

b. Los peinamo^{h}.
Los pein - amoh.
REF3pl comb PRES1pl.
(We) comb them.

In (22b), Yaxum confused the 3pl accusative clitic *los* with the 1pl reflexive clitic *nos* 'ourselves' and he aspirated the alveolar voiceless fricative at the end of

the word (cf. adult Spanish: *Nos peinamos* 'we comb ourselves').

The data discussed and analyzed in this section demonstrate that the children could be grouped in three different interlanguage levels. The children in the non-advanced levels demonstrated that their acquisition of the reflexive clitic paradigm was not uniform. They also demonstrated that some clitics are acquired before others. Based on the data from María Angélica and Ervin, I suggest that the reflexives that are acquired first, are the 2sg clitic *se* 'yourself' and the 2pl clitic *se* 'yourselves'. These are followed by the acquisition of the 1sg clitic *me* 'myself', and the 1pl clitic *nos* 'ourselves'. The last clitics to be acquired are the 3sg clitic *se* 'her/himself' and the 3pl clitic *se* 'themselves', which were produced inconsistently across the elicited verbs by the children at the intermediate level. This is clearly due to the fact that four of the grammatical persons in the reflexive clitic paradigm have identical clitics, i.e., the 2sg, 2pl, 3sg and 3pl have *se* as their reflexive clitic.

Furthermore, the children's constructions demonstrated that cliticization was not produced across the set of verbs that were elicited, nor was it produced within individual verb paradigms. On the contrary, their clitic production was based on verb-specific knowledge and individual grammatical persons, which was influenced by their L1 grammars. This occurred most frequently with the children at the beginning level, who often hypothesized that the elicited Spanish verbs had the same properties as the Kaqchikel equivalents. This resulted

in the transference of the transitive properties of the equivalent Kaqchikel verbs, which do not, in all cases, have reflexive transitive properties. For instance, the transitivity of Kaqchikel action verbs such as *-ch'aj* 'to wash', as in *nuch'äj rupaläj la ixöq* 'the woman washes her face' was transferred onto Spanish; thus, neither the children at the beginning level nor those at the intermediate level produced the required reflexive clitic. Finally, the children at beginning and intermediate interlanguage levels demonstrated that the acquisition of reflexive clitics is not an instantaneous process.

4.3.3 Personal 'a' Marking (PA)

This section discusses and analyzes the children's results on the production of personal 'a' marking (PA), which, as has been discussed earlier, assigns accusative case to human and animate direct objects in Spanish. The results rank-listed on table 4.5 indicate that half of the group did not produce PA marking on half of the elicited constructions. These low scores were not expected, especially in the cases of Ixb'alam and Ixmukane. The entire group produced structures other than PA marking constructions, which are the following: (1) ditransitive verb constructions that required dative case marking instead of accusative marking; (2) reflexive or oblique constructions; (3) dative, accusative, and other constructions that were ungrammatical; and (4) accusative clitic constructions, that were grammatical.

These different structures and their percentages are rank-listed in table 4.5. The abbreviations on the far

left column indicate the following: dative clitic constructions (DCL); reflexive and other constructions (Other); dative, accusative, and other constructions that were ungrammatical (*Other); accusative clitic constructions (ACL); constructions that lacked PA marking (*PA); and personal 'a' marking constructions (PA). The results for PA marking listed on table 4.4 are listed at the bottom of this table for convenience.

Table 4.5 The children's percentages on PA marking

Tokens: 16	A_9	E_9	S_8	K_8	Y_8	T_9	B_9	M_{10}
DCL.	0	19	12	29	6	19	0	31
Other	0	0	12	0	0	0	19	0
*Other	50	37	31	0	6	0	0	0
ACL.	0	0	0	14	0	0	19	12
*PA	29	0	7	14	0	6	19	0
PA	21	44	44	43	87	75	44	56

Yaxum and Tojil scored the highest percentages, although they had not been in elementary school as many years as Ixmukane had. They also produced grammatical and ungrammatical constructions. Ixmukane followed Tojil and Yaxum with an average score of 56 percent. Ervin, Säqche', Kot, and Ixb'alam scored an average of 43 percent. María Angélica obtained an average of 21 percent, which was the lowest score of the group.

It is difficult to attribute the low percentages of Kot, Ixb'alam, and Ixmukane to the number of years of schooling. They were among the children who had been in school three or more years, although Ixmukane was the child who produced only grammatical structures. Perhaps, this indicates that Ixmukane consolidated her acquisition

of PA marking, but chose to use it less frequently. In contrast, Ixb'alam and Kot produced accusative clitic and other types of constructions, but most importantly, they did not PA mark some direct objects, which indicates that they had not consolidated their acquisition of this type of structure.

Additionally, the low percentages of María Angélica, Ervin, and Säqche' are directly correlated to the two years that they had been exposed to Spanish in school. They produced PA marked direct objects in few constructions, and produced the most ungrammatical structures. In what follows, I discuss in detail the different constructions that are listed on table 4.5.

The dative clitic constructions that 75 percent of the group produced were mainly of two types. The first type concerned dative cliticization with ditransitive verbs such as *dar* 'to give' and *pegar* 'to hit', as well as verbs that represent the action of combing human hair. The second type concerned the use of a dialect variation of the dative clitics *le* 'to you/her/him/' and *les* 'to you/them'. In some dialects, these dative clitics encroach partially or wholly on the functions of the accusative clitics *se/la/lo* 'you, her, him' and *se/las/los* 'you/them'. That is, the dative clitics *le/les* are used instead of accusative clitics, and this dialect phenomenon is known as *leísmo*.

Garzon (1991) reported the occurrence of this phenomenon in the Spanish dialect of Comalapa, Guatemala. Garzon (1991) tested 12-year-old children who were Kaqchikel-Spanish bilinguals in Comalapa. The author found that they used the 3pl dative clitic *les* with both

the ditransitive Spanish verb *pegar* 'to hit' and the transitive Spanish verb *corretear* 'scare off/chase'. However, Garzon (1991) suggested that more research was needed to test if the children's *leísmo* was an aspect of Kaqchikel-Spanish bilingualism, or if, it was just a characteristic of the region's Spanish dialect.

The first type of dative clitic construction that I illustrate here concerns ditransitive verbs that replaced the expected transitive verbs. For instance, the children produced the ditransitive verbs *pegar* 'to hit' and trenzar 'to braid' instead of producing the verbs *patear* 'to kick' and *peinar* 'to comb'. The examples below are from Tojil and Ixmukane:

(23) a. ?Un niño pegandole al animal con su zapato.
Un niño peg - ando - le al animal
A boy hit PROG 3sgDCL to-the animal
con su zapato
with his shoe
A boy (is) hitting (to) the animal with his shoe.

b. Le trenza el pelo a una niña.
Le trenz - a el pelo a una niña
2sgDCL braid 3sgPRES the hair to a girl
(She) braids the hair to a girl.

The construction in (23a) is questionable because it lacks the inflected auxiliary está 'is', which indicates the grammatical person of the external argument. However, Tojil appropriately cliticized the dative clitic *le* on the verb *pegando* 'hitting', and this clitic doubles the prepositional phrase *al animal* 'to the animal'. He also adjoined the instrumental phrase *con su zapato* 'with

his shoe', showing that his knowledge of Spanish grammar was quite advanced. In (23b), Ixmukane used the verb *trenzar* 'to braid', and cliticized *le* to preverbal position. This clitic doubles the prepositional phrase *a una niña* 'to a girl'. She also produced the direct object *el pelo* appropriately, resulting in a grammatical sentence.

The types of constructions that encroached on the functions of the accusative clitics involved transitive verbs such as *acariciar* 'to pet', *bañar* 'to bathe', and *patear* 'to kick'. Some of the children used dative clitic constructions with these verbs rather than PA marking; for instance:

(23) a. El niño le patea a su perrito.
El niño le pate - a a su perrito
The boy 3plDCL kick 3sgPRES to his doggy
The boy kicks (to) his doggy.

b. La mamá les está bañando a sus hijos en el tuj.
La mamá les est - á bañ - ando
The mother 3sgDCL be 3sgPRES bathe PROG
a sus hijos en el tuj
to her sons in the Mayan-bath
The mother is bathing them in the Mayan bath.

The sentences in (23a-b) are grammatical and good examples of the *leísmo* phenomenon. Kot followed the canonical word order of Spanish in (23a), as did Yaxum. Also note that Yaxum adjoined the prepositional phrase *en el tuj* 'in the Mayan-bath', which illustrates the borrowing of the Kaqchikel lexeme *tuj* 'Mayan-bath'.

The following ungrammatical sentence show that Ervin transferred from Kaqchikel onto Spanish. This structure

concerns the Spanish verb *acariciar* 'to caress/pet' or, alternatively, the verb *tocar* 'to touch'. However, he did not know this verb and used instead the verb *dar* 'to give'. The expected Spanish structure is *el niño acaricia al perro* 'the boy pets the dog'.

(24) *Le da su mano arriba de su cabeza el perro.

Le d - a su mano arriba
3sgDCL give 3sgPRES his hand on top
de su cabeza el perro
of his head the dog

(He) gives his hand on top of his head the dog.

It is hard to make sense of Ervin's sentence in (24a), which is problematic for two main reasons. First, he used the inappropriate verb. Second, he transferred certain constituents of the structure that he provided in Kaqchikel: *Jun ti ak'wal nuchop pa rujolon la tz'i'* which literally means 'one little boy touches on his head the dog'. Ervin transferred the Kaqchikel phrase *pa rujolon la tz'i'* onto the Spanish phrase *arriba de su cabeza el perro* 'on of his head the dog', to which he assigned genitive case twice. The first time, he assigned genitive case with *de* 'of' and the second time with *su* 'his'. All of these resulted in an ungrammatical structure.

Similarly, María Angélica was expected to produce the adult Spanish structure *el niño acaricia al perro* 'the boy pets the dog'. However, she transferred from Kaqchikel onto Spanish the Kaqchikel structure *kiyon kiq'a pa kijolon* 'they have put their hands on their heads' and this resulted in structure listed in (25).

(25) *al achando su mano al cabezita.

al ach - ando su mano al cabezita

he(?) throw PROG his hand to-the head-little

(He) throwing his hand on the little head.

It is not clear what sort of morphosyntactic constituent *al* is. It may be the prepositional phrase *a el* 'to the', or it may be the pronoun *él* 'he' in which case the vowel [e] was mispronounced as [a]. The latter is a likely possibility since she mispronounced the initial vowel [e] as [a] in the verb *echando* 'throwing'. She misused the verb *echar* 'to throw/lay down/toss'. Moreover, she hypothesized erroneously that her Kaqchikel *kiq'a pa kijolon* 'their hand on their head' could transfer onto Spanish as *su mano al cabezita* 'her hand on the little head'. Thus, María Angélica's verb choice, along with the transferring of Kaqchikel phrase constituents, resulted in an ungrammatical sentence.

In (26), María Angélica also transferred another structure from L1 to L2, and this concerns the Spanish verb *peinar* 'to comb' that was expected in the following adult Spanish form: *las mamás trenzan a las niñas* 'the mothers braid the girls' hair'. She transferred from the Kaqchikel *ruwi' la jun ixöq* 'her hair of the one woman' onto Spanish.

(26) *Están haciendo trenzas de las patojitas.

Est - án hac - iendo trenzas

be 3plPRES make PROG braids

de las patojitas

of the little-girls

(They) are making braids of the little girls.

The verb *hacer* 'to do' and the internal argument *trenzas* 'braids' are appropriate. However, the problem surfaced with *de las patojitas* 'of the little girls' to which she assigned genitive case rather than accusative case. This resulted in an ungrammatical structure, although the Kaqchikel equivalent structure is grammatical. Thus, María Angélica and Ervin transferred Kaqchikel structures directly onto Spanish. This tranferring indicates that the children at the beginning interlanguage level have problems with PA marking.

Kot, Ixb'alam, and Ixmukane produced accusative clitics rather than PA marking at a 15 percent average. This also explains their low percentages, and separates them from Tojil and Yaxum, who scored the highest percentages in this category. Some examples from these children are the following:

(27) a. Botandolo.
bot - ando - lo
throw PROG 3sgACL
(He) (is) throwing him.

b. Los están bañando.
Los est - án bañ - ando
3plACL be 3plPRES bathe PROG
(They) are bathing them.

c. Y el niño la está empujando.
Y el niño la est -á empuj – ando
and the boy 3sgACL be 3sgPRES push PROG
And the boy pushes her.

In (27a-c), these three children cliticized appropriately the accusative clitics *lo* 'him', *los* 'them', and *la* 'her'. Significantly, Kot in (27a) and Ixb'alam in (27b)

did not produce the PA phrases that double these clitics, which should have been included since the internal arguments had not been introduced in the discourse. In fact, the external ones had not been introduced in the discourse either. Ixmukane had introduced the internal argument in a previous sentence, which is why the sentence in (27c) started with *y* 'and'. Of the three structures, Kot's (27a) is marginally acceptable because he did not include the copula *está* 'is', which explains his cliticization of the clitic *lo* 'him' on the verb *botando* 'throwing'. In contrast, Ixb'alam in (27b) and Ixmukane in (27c) placed the clitic in pre-auxiliary position. Thus, these children did not make errors in the placement of these accusative clitics; they knew that the clitic may be placed to the pre-auxiliary position or remain in postverbal position.

Table 4.5 shows that María Angélica, Säqche', Kot, Tojil and Ixb'alam (62% of the group) produced direct objects with PA marking. Of these children, María Angélica, a child at the beginning interlanguage level, had the highest percentage (29%). Ixb'alam, who was at the advanced interlanguage level, followed with second highest score of 19 percent. Evidently, children from all three interlanguage levels were still in process of consolidating their acquisition of PA marking. An example from each of these two girls follows:

(28) a. *Está empujando la patoja.
Est - á empuj - ando la patoja
be 3sgPRES push PROG the girl
(He) is pushing the girl.

b. *Abrazando su hija.
abraz - ando su hija
be PROG her daughter
(She) (is) hugging her daughter.

In (28a), María Angélica did not assign accusative case with the personal 'a' marker to the direct object *la patoja* 'the girl' (cf. adult Spanish: *el niño columpia a la niña* 'the boy pushes the girl'). Ixb'alam, in (28b), did not PA mark the direct object *su hija* 'her daughter' either (cf. adult Spanish: *la mamá está abrazando a su hija* 'the mother is hugging her daughter'). The fact that only two children of the group PA marked the direct objects in over 70 percent of the cases indicates that this structure is difficult for L2 learners to acquire. Since PA marking and accusative cliticization are indicators of accusative case assignment to direct objects (internal arguments), I calculated the average percentage from the results listed on table 4.5 to ascertain if there was a difference in the children's levels of knowledge of accusative case and PA marking.

Table 4.6 Percentages on accusative clitics and PA marking

	A_9	E_9	S_8	K_8	Y_8	T_9	B_9	M_{10}
ACCL.	0	0	0	14	0	0	19	12
'a'	21	44	44	43	87	75	44	56
Total %	21	44	44	57	87	75	63	68

The combined percentages resulted in the regrouping of the children at the intermediate and advanced interlanguage levels. María Angélica, Ervin, and Säqche' were still placed at the beginning interlanguage level in terms of accusative case assignment and PA marking and their scores averaged 36 percent. Those placed at the intermediate interlanguage level were Kot, Ixb'alam and Ixmukane, whose scores averaged 63 percent. Tojil and Yaxum were placed at the advanced interlanguage level with their 81 percent average. The scores of the beginners show a more direct correlation with the number of years spent in school. However, for the other children, the new results do not show a correlation between the number of years in school and the level of knowledge, particularly in the case of Tojil and Yaxum who had not been in school as long as Ixmukane. The group as a whole had problems with PA marking and had not completed its acquisition. Thus, the data suggest that the younger the L2 learner begins school the sooner the child will acquire PA marking.

4.3.4 Accusative Clitics

Table 4.4 indicates that the children were generally better at producing accusative clitics than PA marking, particularly, Ervin (71%) and Säqche' (57%), who were at the beginning interlanguage level. These children did much better than Yaxum (36%), whose low percentage, as well as that of Tojil (64%) were surprising given that their results in the PA marking category were the highest of the group. In comparison, the oldest children and also with the most schooling produced the most accusative clitics, i.e., Ixmukane scored 93 percent and Ixb'alam 75 percent. It is important to note that the percentages of María Angélica (100%) and Kot (100%) were based on the six accusative clitic tokens that they provided during the first and second visits. These results are probably not representative of their knowledge of accusative cliticization because their results were the highest of the group.

The data show that the children produced accusative clitics and other verb structures. The results on all these different verb structures are listed on table 4.7 and they are labeled as follows: ungrammatical dative clitic (*DCL), ungrammatical accusative clitic doubling (*ACLD), ungrammatical clitic (*CL), the transferring of Kaqchikel (TRANS), dative clitic (DCL), personal 'a' marking (PA), and accusative clitic (ACL).

Table 4.7 Percentages on accusative and other clitics

14 Tokens	A_9	E_9	S_8	K_8	Y_8	T_9	B_9	M_{10}
*DCL	0	7	14	0	0	14	0	0
*ACLD	0	0	0	0	43	21	21	0
*CL	0	0	7	0	14	0	0	0
*TRANS	0	0	7	0	0	0	0	0
DCL	0	14	7	0	0	0	0	0
PA	0	7	7	0	7	0	0	7
ACL	100	71	57	100	36	64	79	93

The results on this table indicate that Yaxum and Säqche' had the lowest scores in the production of accusative clitics. Yaxum produced the most errors, scoring 36 percent in accusative cliticization, while Säqche' scored 57 percent. Both children provided the wrong clitic or did not provided it at all. In addition, Säqche' transferred from L1 to L2and produced incorrect dative constructions.

As a group, Tojil, Ervin and Ixb'alam scored an average of 71 percent. Tojil had problems producing the accusative clitic on transitive and ditransitive verbs. Ervin had problems cliticizing both dative and accusative clitics. In contrast, Ixb'alam had problems mainly with accusative cliticization. Finally, Ixmukane, María Angélica and Kot, as a group, scored an average of 97 percent; they did not produce any ungrammatical structures. In what follows, I discuss and analyze in detail each of the verb structures listed on table 4.7.

Table 4.7 indicates that Ervin, Säqche' and Tojil (37% of the group) produced ungrammatical dative clitic

structures (*DCL) in which either a dative clitic or a prepositional phrase was absent. These ungrammatical structures occurred when the children described two events that required the Spanish verb *peinar* 'to comb' and the feminine accusative clitics *la* 'her' and *las* 'them' as in *la peiné* '(I) combed her' or *las peiné* '(I) combed them'. The problem was that the verb *peinar* 'to comb' has also ditransitive properties, in which case the direct object (internal argument) is the body-part *hair*. Hence, the children treated *peinar* 'to comb' as a ditransitive verb.

In (29a), Ervin did not cliticize *le* and marked the internal argument with the demonstrative possessive *su* 'her'. He transferred onto L2 the Kaqchikel requirement that genitive case must be marked on internal arguments that are body-parts. The Kaqchikel structure for *I combed her hair* is *xinjïk ruwi'* and Kaqchikel hair, *-wi'*, is marked with genitive case by the Erg3sg prefix *ru-* 'her'. In contrast, Spanish requires that the body part be specified with the determiner *el* 'the'. As shown in (29b), Tojil made three attempts at producing the appropriate structure. Interestingly, he started with the expected accusative clitic *la* 'her' and almost completed the inflection of the verb, but he corrected himself by producing another structure. In his third attempt, he produced the 3sg dative clitic *le*, as well as the indirect object *a Ixchel* 'to Ixchel'. However, he did not provide the direct object *el pelo* 'the hair', which resulted in an ungrammatical structure.

(29) a. *Yo peiné su pelo a Marina.

Yo pein - é su pelo a Marina

I comb 1sgPAST her hair to Marina

I combed her hair to Marina.

b. *La pei, le peiné, le peiné a Ixchel.

La pei, le pein - é

3sgACL comb 3sgDCL comb 1sgPAST

le pein - é a Ixchel

3sgDCL comb 1sgPAST PA Ixchel

(I) comb her, combed her, I combed her (to) Ixchel.

c. *Les peiné a las dos, a ustedes.

Les pein - é a las dos a ustedes

3plDCL comb 1sgPAST to the two to you (pl)

(I) combed them both, to you.

Finally, Säqche' in (29c) included the 3pl dative clitic *les* and the indirect object *a las dos* 'to both', which he corrected with the more appropriate phrase *a ustedes* 'to you (pl.)'. Nevertheless, he did not supply the direct object *el pelo* 'the hair'.

Finally, in the examples (29a-c), Ervin, Tojil and Säqche' demonstrated that they had consolidated their knowledge of the prepositional phrase that is required with ditransitive verbs and dative clitics. However, Ervin did not cliticize *le* 'to her' and this revealed that he had not acquired dative cliticization for grooming verbs such as *peinar* 'to comb'. Conversely, Tojil and Säqche' did not supply the direct object *el pelo* 'the hair'. They seemed to have treated the clitic *le* as if it were an accusative clitic and not a dative

one, since in the structure *la peiné* '(I) combed her', the presence of the body-part, hair, is not obligatory.

Yaxum, Tojil and Ixb'alam had problems with accusative clitics in doubling constructions (see *ACLD in table 4.7). They all produced the PA marked phrase that is required in doubling constructions, but did not use the obligatory accusative clitics. Interestingly, these children had been in school from three to four years and they had the higher error percentages in this type of clitic doubling structure. Some of the problems of Yaxum, Tojil and Ixb'alam concerned the accusative clitics *la* 'you/her' and *las* 'you (pl.)'. In (30), some examples from these children are illustrated.

(30) a. *A las dos peiné.

A las dos pein - é

PA the two comb 1sgPAST

(I) combed the two.

b. *Peiné a ustedes dos.

Pein - é a ustedes dos

comb 1sgPAST PA you (pl.) two

(I) combed you two.

Tojil, in (30a) produced the PA marked phrase *a las dos* 'to the two' in preverbal position, but did not cliticize *las* 'you (pl.)'. Although the pragmatic context made it clear that Tojil meant *both of you* by using the phrase *a las dos* 'to the two', the structure in (30a) is still ambiguous without pragmatical information. It could mean *to you two* or *to them two* (cf. the adult Spanish: *las peiné a ustedes* '(I) combed-you to you (pl.)'. Tojil was not the only child who produced PA marked phrase and the numeral *dos* 'two'. Eighty-three percent of the children

produced them, with mostly ungrammatical results. For example, in her interpretation of the same event, Ixb'alam included the PA marked phrase *a ustedes dos* 'to you two' to indicate the number of direct objects of the verb *peiné* '(I) combed'. Even though her structure is marginally better than that of Tojil, it is still ungrammatical because the 2pl accusative clitic *las* was not produced.

Another example of the previous pattern is from Yaxum. He, too, used the PA marked phrase *a las dos* 'to the two'; however, he included the personal pronoun *ustedes* 'you (pl.)'. Comparing the adult Spanish structure *las ví a ustedes* '(I) saw you (to you'), it can be observed that the clitic *las* 'to you' was not produced by Yaxum.

(31) *Ví a las dos, ustedes.

V	-	í	a	las	dos	ustedes
see		1sgPAST	to	the	two	you (pl)

(I) saw the two, you.

Note that Yaxum attempted to disambiguate the PA marked phrase *a las dos* 'to the two' by adjoining the personal pronoun ustedes 'you (pl.)'. Nevertheless, the resulting verb phrase is still ungrammatical because of there was no cliticization. I suggest that Tojil, Ixb'alam and Yaxum were interpreting events and constructing morphosyntactic descriptions that were influenced by Kaqchikel. I compared their Kaqchikel VPs and I found that they produced DPs such as *ix ka'i'* ('you two'), *chi ix ka'i'* ('to you two') and *ri ka'i'* ('the two'). In fact, an average of 62 percent of the children produced a Kaqchikel DP or a Kaqchikel PP with the numeral *ka'i'*

'two'and half of those who produced Kaqchikel phrases with *ka'i'* transferred the exact structure of the Kaqchikel phrases to Spanish. Only, Ixmukane described the events with the grammatical structures *las peiné a ustedes* and *las ví a ustedes*, where the clitic *las* 'you (pl.)' is doubled by the phrase *a ustedes* 'to you (pl.)'.

Concerning clitic doubling constructions, it was mentioned in section 4.1 that Strozer (1976) proposed that there is a constraint on the occurrence of certain clitic doubling constructions. The constraint is on the simultaneous and obligatory occurrence of PA marked direct object marked and its corresponding clitic. For instance in *la peinó a usted* '(she) combed you' the accusative 3sg clitic *la* 'you' co-occurs obligatorily in the same construction as the PA marked phrase *a usted* 'you'. Bello had given his own account of this constraint in 1945. Bello, who has been one of the most notable grammarians of Spanish, classified this type of structure as *forma compuesta* 'complex form' and suggested that this form presupposes a simple clitic structure. That is, one in which a clitic is included, e.g., *la peinó* '(she) combed you'. Bello (1945:300) explicated this constraint in his own words as follows:

> fuera de la poesía es muy violento emplear como complemento directo la forma del acusativo a mí, a ti... 'outside poetry it is very violent to use the accusative forms to me, to you as direct complements...'

Bello (1945) proposed that accusative pronouns in PA marked phrases such as *a mí, a ti* should be used redundantly, but that this constraint on cliticization

does not apply when the direct objects are personal nouns. In other words, as Strozer (1976) suggested, if the DP is nonpronominal, it may occur without a clitic; for instance, *miré a Juana y Rosa* '(I) saw Juana and Rosa', or it may occur with a clitic *las miré a Juana y Rosa* '(I) saw them, Juana and Rosa'.

Evidently, Yaxum, Tojil and Ixb'alam had not yet acquired this constraint. These children had the highest percentage scores in ungrammatical accusative clitic doubling (*ACLD). Yaxum scored 47 percent, and Ixb'alam and Tojil 21 percent (see table 4.7). The examples in (32) demonstrate how systematically Yaxum, Ixb'alam and Tojil produced the PA phrase, but not the obligatory accusative clitic that must obligatorily be present with the PA phrase.

(32) a. *Miré a usted.
Mir - é a usted
look 1sgPAST PA you
(I) saw you.

b. *Abrazar a mí.
Abraz - ar a mí
hug INF PA you
(You) hug me.

c. *Ví a ella.
V - í a ella
see 1sgPAST PA she
(I) saw her.

In (32a), Yaxum did not cliticize the 2sg accusative clitic *la* that obligatorily doubles the personal 'a' phrase (cf. adult Spanish *la miré a usted* 'I combed the two of you'). Ixb'alam did not cliticize *me* 'me' in

(32b), nor did she inflect the verb; she left it in infinitive form (cf. adult Spanish: *me abrazó a mí* '(you) hugged me, to me'). Tojil, in (32c), did not cliticize the 3sg accusative clitic *la* (cf. adult Spanish form *la ví a ella* 'I saw her'). Hence, the data show that Yaxum, Tojiland Ixb'alam had not acquired this constraint yet, although these children had been in school an average of four years.

Turning to ungrammatical clitic structures, table 4.7 indicates that Yaxum and Säqche' produced this type of structure. Säqche' produced 7 percent and Yaxum 14 percent ungrammatical clitic structures of the 14 tokens or structures that were elicited. The example in (33) indicates that Säqche' did not produce the clitic *me* 'me'.

(33) *Está abrazando.

Est	- á	abraz	-	ando
be	3sgPRES	hug		PROG

(She) is hugging.

The lack of cliticization in (33) resulted in an ungrammatical verb phrase. The clitic *me* 'me' was absent, making it impossible to tell whom is being hugged (cf. the adult Spanish *me está abrazando* '(she) is hugging me'. In the case of Yaxum, his high score was not due to the lack of cliticization, but to the use of the inappropriate clitic.

(34) *Ella los abrazó a los dos.

Ella los abraz - ó a los dos

She 3sgDCL hug 3sgPAST PA the two

(She) hugged them both.

(Cf. adult Spanish: usted nos abrazó 'you hugged us')

She hugged them, to the two.

Yaxum confused the 3pl accusative clitic *los* 'them' with the 1pl accusative clitic *nos* 'us'. On that occasion, I repeated the action, and asked Yaxum again to describe it, and he produced again *los* instead of *nos*. Moreover, he confused the subject pronoun. The pronoun *ella* 'she' was expected, but he produced *usted* 'you'. Apparently, he treated *los* 'them' as if functioned as both the 1pl *nos* 'us' and the 3pl *los* 'them' since he had yet not acquired the clitic *nos* 'us'. He did not cliticize it in any of the required contexts, instead, he cliticized *los*. Thus, he gave no evidence that he had acquired the clitic *nos* 'us'.

Interestingly, Yaxum had acquired the pronoun *nosotros* 'we'. In (35), *nosotros* is used correctly (cf. adult Spanish: *nos abrazó a nosotros* '(she) hugged-us to us'). Nevertheless, his construction was ungrammatical because the phrase a *nosotros* requires cliticization of *nos* 'us'.

(35) *Ella abrazó a nosotros, a mi y a ella.

Ella abraz - ó a nosotros,

She hug 3sgPAST PA us

a mi y a ella

PA me and PA she

She hugged us, me and her.

Yaxum provided an incomplete clitic doubling construction because by providing the PA phrase *a nosotros* 'to us' he was required to provide the clitic *nos* 'us' as well. Note, also that he adjoined the complex phrase *a mi y a ella* 'to me and her' to clarify that the event of hugging was performed on him and María, as if he knew that something was missing, but he could not decode the correct construction. Thus, Yaxum demonstrated his knowledge of the pronoun *nosotros* 'we', but not of its corresponding clitic *nos* 'us'.

Regarding the direct transferring of Kaqchikel onto Spanish, table 4.7 shows that Säqche' was the only child who transferred directly. Säqche' was not able to provide the Spanish description of the event when he was hugged by María and me. This event may be described by the adult Spanish form *ustedes me abrazaron* 'you (pl.) hugged me'. Säqche' described this event by producing the Kaqchikel imperative verb phrase *kinatej* 'you (sg.) hug me', where the last syllable of verb *-q'etej* 'to hug' was inflected with the ERG2sg prefix *a-*. In this example, Säqche' clearly demonstrated that he was processing his knowledge of Spanish through his L1, and that if, he could not, even momentarily, access lexemes or the morphosyntax of his L2, he resorted to using his L1, Kaqchikel.

Thus far, I have discussed and analyzed the major ungrammatical structures that the children produced, but as table 4.7 indicates, they also produced grammatical structures, such as dative cliticization (DCL), accusative personal 'a' marking (PA) and the expected

accusative cliticization. In what follows, I discuss these structures in detail.

Ervin and Säqche' were the only children of the group who produced dative clitics rather than accusative clitics. The examples in (36) were recorded during the third visit and they show that these children had made progress in the acquisition of this type of dative structure since they produced ungrammatical dative structures during the previous visits:

(36) a. Yo les miré a ustedes.
Yo les mir - é a ustedes
I 2plDCL see 1sgPAST PA you
(I) looked at you.

b. Le peiné el pelo a Ixchel.
Le pein - é el pelo a Ixchel
3sgDCL com 1sgPAST the hair PA Ixchel
(I) combed the hair of Ixchel.

Although the feminine accusative clitics *la* 'her' and *las* 'them' were expected, the clitic forms that the children used were grammatical. In (36a) Ervin cliticized the dative clitic *les* 'to you (pl.)' in the preverbal position of the verb *miré* 'looked' and produced the appropriate prepositional phrase *a ustedes* 'to you (pl.)'. Interestingly, Ervin showed that he was able to cliticize with the verb *mirar* 'to look' in (36a), but not with the verb *peinar* 'to comb' in (29a). Unlike in (29c), Säqche' produced the required internal argument *el pelo* 'the hair', the dative clitic *le* 'to her' and the appropriate PP *a Ixchel* 'to Ixchel' in (36b). Ervin treated the verb *mirar* 'to see' as a ditransitive verb and Säqche' did the same with verb *peinar* 'to comb'.

Thus, these children did not provide evidence of having acquired the accusative clitics *la* 'her' and *las* 'them'.

More evidence that Ervin and Säqche', had not yet acquired the feminine accusative clitic *la* 'her' is presented in (37). The interesting aspect of the examples below is that the children used personal names rather than the feminine accusative clitic *la* 'her'. The difference between the VP of Säqche' in (37a) and that of Ervin in (37b) is basically that Ervin produced overtly the external argument *yo* 'I'.

(37) a. Ví a Ixchel.
V - í a Ixchel
see 1sgPAST PA Ixchel
(I) saw Ixchel.

b. Yo ví a Marina.
Yo v - í a Marina
I see 1sgPAST PA Marina
I saw Marina.

c. La peiné a Ixchel.
La pein - é a ella
3sgACL comb 1sgPAST PA she
(I) combed her.

The example in (37c), produced by Ixb'alam, was included to demonstrate the different interlanguage levels that the children in the group represented. Ixb'alam was at a more advanced level than Ervin and Säqche', who were at the beginning interlanguage level. Ixb'alam, unlike Ervin and Säqche' in (37a-b), provided both the clitic and a personal name. She produced a VP that is closer to the adult VPs *la ví a ella* 'I saw her (to she)' and *la peiné a ella* '(I) combed her (to she)'. Although all the

examples in (37) are grammatical, the essential difference between (37a-b) and (37c) is the cliticization of *la*. Once more, there is no evidence that Ervin and Säqche' had acquired the feminine 3sg accusative clitic *la* 'her'.

The children's knowledge of the accusative clitic paradigm was still in the process of consolidation. Of all the person clitics, they were best at producing the 1sg clitic *me* 'me' and the 1pl clitic *nos*. The group produced an average of 92 percent of the tokens of the clitic *me* and an average of 87 percent of the tokens of the clitic *nos* 'us'. Seventy-five percent of the children cliticized *me* 'me'; 37 percent adjoined the subject *ustedes* 'you (pl.)' to postverbal position (38a), twelve percent projected *ustedes* to preverbal position and the rest did not include the subject. The accusative clitic *nos* 'us' in (38b) was cliticized by 87 percent of the group.

(38) a. Me peinaron ustedes.

Me	peinar	-	on	ustedes
1sgACL	comb		2plPAST	you (pl)

(You (pl.)) combed me.

b. Nos abrazó.

Nos	abraz	-	ó
1plACL	hug		2sgPAST

(You) hugged us.

The children were successful at producing *me* 'me' and nos 'us'. In comparison, the group did not do as well with the 2sg formal feminine clitic *la* 'you'; the group's average was 67 percent. The 2pl *las* 'you' was more problematic than the singular *la* since the group's

average was 42 percent. However, the clitic that seemed to be the most problematic for the children was the 3sg feminine clitic *la* 'her'; the group's average was only 17 percent.

I suggest that the reason for the group's low averages on the cliticization of the feminine clitics *la* 'her' and *la* 'you' was their morphological similarity. The following examples show how this similarity may only be disambiguated with a PA marked phrase.

(39) a. La ví a ella.

La	v	-	í	a	ella
3sgACL	see		2plPAST	PA	she

(I) saw her.

b. La peiné a usted.

La	pein	-	é	a	usted
2sgACL	comb		2plPAST	PA	you

(I) combed you.

Note that in (39a-b) the clitics are identical and that the personal 'a' phrases, *a ella* 'to her' and *a usted* 'to you', disambiguate the clitic *la*. The plural versions of the structures in (39) would be identical as well; they would necessarily contain the clitic forms *las* 'you (pl.)' and *las* 'them'. Besides having to process and acquire these four clitic forms, the children also have to figure out and acquire the singular feminine determiner *la* 'the' and the plural feminine determiner *las* 'the'. Thus, the children have to acquire the different distributional properties of each clitic and each determiner. The children's difficulties at producing these clitics demonstrate that the acquisition of all these clitic forms is a lengthy process.

Although there are clitic forms that are morphologically similar, there others that are not and they do not present the same acquisition problem. The 2sg informal accusative clitic *te* 'you' is one of these no problematic clitics. For example, Ervin and María Angélica, who were at the beginning interlanguage level, used *te* 'you' without problems. This clitic does not resemble any other clitic or determiner.

(40) Yo te ví.

Yo	te	v	-	í
I	2sgACL	see		2plPAST

I saw you.

The example in (40) was produced by Ervin, who used the optional 1sg pronoun *yo* 'I' and the 2sg informal clitic *te* 'you', which really do not follow the pragmatic norms of Guatemalan Spanish. The formal forms of the 2sg should be used in conversations with adults. Ervin and María Angélica were the only children who used the informal form *te* 'you'. There is enough data from Ervin to suggest that the forms *la* 'to you' and *la* 'to her' are acquired after the informal 2sg accusative clitic *te* 'you'.

In sum, despite the problems of acquisition brought by these forms, the children with an average of 75 percent did better in this category than in the PA marking category, particularly Tojil, Ixb'alam and Ixmukane, who had been in school the longest. Also, based on these data, I suggest that the children acquired the transitive and clitic properties of individual verbs and not of entire verb classes and that accusative

clitics are acquired hierarchically with the least morphologically similar clitics being acquired first.

4.3.5 Dative Clitics

This section describes and analyzes dative constructions that were expected, as well as others that were not expected. The dative constructions that were not expected involved the verb *dar* 'to give', which replaced the verbs *alimentar* 'to feed' and *besar* 'to kiss'. Those constructions that were expected involved the verbs *lavar* 'to wash', *tocar* 'to touch', *poner* 'to put on' and *quitar* 'to take off'. The percentages on table 4.8 show that the group besides producing grammatical dative clitic constructions, they produced other structures that replaced dative cliticization. These structures were labeled as follows: (1) the absence of dative cliticization (*ABDCL); (2) the use of the wrong dative clitic (*DCL); (3) incomplete clitic constructions in which the direct or indirect object is absent (*ICLC); (4) transference of a Kaqchikel construction onto Spanish (*TRANS); and (5) an accusative clitic construction replaced the expected dative one (ACL). The results for the grammatical dative clitic structures (DCL) listed on table 4.4 are listed at the bottom of this table for convenience.

Table 4.8 Percentages on dative clitics

23 Tokens	A_9	E_9	S_8	K_8	Y_8	T_9	B_9	M_{10}
*ABDCL	43	52	39	8	13	8	4	0
*DCL	17	13	8	13	13	22	4	13
*ICLC	4	0	0	0	0	4	0	0
*TRANS	4	4	4	0	0	0	0	0
ACL	0	0	0	0	0	4	8	0
DCL	30	30	48	78	74	61	83	87

The children's results on dative cliticization showed a more direct correlation to the number of years that they had been exposed to Spanish. Ixmukane and Ixb'alam scored an average of 86 percent and they been in school five and four years respectively. Tojil, Yaxum and Kot scored an average of 71 percent and they had been in school between four and three years. Säqche', María Angélica and Ervin scored an average of 36 percent and they all had been in school two years. Thus, Ixmukane, the child who had been the most years in school, achieved the highest percentage. In what follows, I discuss in detail the different structures that are listed on table 4.8.

Except for Ixmukane, all the children produced constructions that lacked dative cliticization (*ABDCL), especially with the verb *lavar* 'to wash'. They did not cliticize the obligatory 3sg dative clitic *le* 'to him'. Although the examples in (41) are from María Angélica and Yaxum, these are representative structures that 75 percent of the children produced with the verb *lavar* 'to wash'. The adult Spanish structure for (41) is *la mamá*

le está lavando la cara a su hijo 'the mother is washing the face to her son'.

(41) a. *Está lavando su cara de su hijo.
Est - á lav - ando su cara de - l niño
be 3sgPRES wash PROG his face of the child
(She) is washing the face of the child.

b. *La mamá está lavando su cara del niño.
La mamá est - á lav - ando su cara
the mother be 3sgPRES wash PROG his face
de - l niño
of the child
The mother is washing the face of the child.

María Angélica and Yaxum did not cliticize the 3sg dative clitic *le*. Most of the children (75%) were also unsuccessful at cliticizing the 3pl dative clitic *les* for the same verb. Clearly, these children had not yet learned dative cliticization for the verb *lavar* 'to wash'. Moreover, the PP *a su hijo* 'to her son' is the indirect object that doubles the dative clitic, but the children did not produce the preposition. Although the determiner *la* 'the' is the appropriate form, hey assigned genitive case *su* 'his' to the direct object *cara* 'face'. María Angélica produced the phrase *de su hijo* 'of her son' and Yaxum produced the genitive phrase *del niño* 'of the child'. I suggest that these children transferred to Spanish the Kaqchikel phrase *rupaläj ral* 'his face of her son', in which the ERG3sg prefix *r-* assigns genitive case.

Evidently, half of the children did not mark the phrase as a dative phrase, i.e., they did not use the preposition a 'to', but instead used the genitive phrase

del 'of the'. Thirty-seven percent of the children marked *cara* 'face' with genitive case *su* 'his'. The data on this verb suggest that half of the group was still constructing Spanish sentences based on L1. In other words, they transferred the Kaqchikel requirement that the internal argument be marked in genitive case.

Other types of constructions for which the children did not produce dative cliticization involved the verbs *tocar* 'to touch', *quitar* 'to take off' and *poner* 'to put on'. The verb *tocar* 'to touch' was not known well by 50 percent of the children and was replaced with the verbs *poner* 'to put' and *agarrar* 'to grab'; for instance, María Angélica and Ervin produced the following:

(42) a. *Lo hechó su mano mi cabeza.
Lo hech - ó su mano mi cabeza
3sgACL throw 3sgPAST his hand my head
(She) threw her hand my head.

b. *El agarró mi cabeza.
El agarr - ó mi cabeza
He grab 3sgPAST my head
He grabbed my head.

It can be observed by comparing the examples in (42) with the adult Spanish form *ella me tocó/agarró la cabeza* 'she touched/grabbed me on the head' that dative cliticization of *me* 'me' did not occur. The specification of the internal argument *cabeza* 'head' with the determiner *la* 'the' did not occur either; the form *mi* 'my' was produced instead. Moreover, María Angélica's (42a) is pragmatically and semantically odd, partly because she used accusative clitic doubling *lo...su mano* 'it ...her hand' with the verb *echar* 'to throw'. Clearly, María

Angélica had not yet acquired the semantics and morphosyntax of the verb *echar*. It selects a locative phrase with a preposition such as *en* 'on/in', which she used in half of her structures with this verb. María Angélica and Ervin seemed to be in the early stages of dative clitic acquisition, since they unsuccessfully assigned transitive properties rather than ditransitive ones to the verbs *echar* 'to throw' and *agarrar* 'to grab'.

Gender agreement was also a problem with the structures in (42). In (42a), María Angélica produced the masculine 3sg accusative clitic *lo* 'him', rather than the feminine counterpart *la* 'her'. The clitic *lo* does not agree with *la mano* 'hand', whose determiner *la* is feminine. Ervin's (42b) was pragmatically odd because the subject was the feminine pronoun *ella* 'she' and not the pronoun *él* 'he'. He apparently had not yet acquired the [+/-feminine] distinction of the pronouns *ella* 'she' and *él* 'he', since he produced *él* rather than *ella* in more than one occasion. I suggest that the problems that these children had with gender agreement were due to the Kaqchikel noun system, which has gender agreement mostly for nouns that refer to humans. It does not have gender distinctions in its pronoun, determiner and adjective systems. María Angélica and Ervin, as well as the other children had not yet acquired completely the gender distinctions of Spanish.

In section 4.1, it was indicated that the dative clitic *le* 'to you/her/him' becomes *se* when the accusative clitic *lo* is also cliticized to preverbal position and it is this morphophonological requirement of Spanish that María Angélica and Ervin had not yet acquired. In (43),

María Angélica made several infelicitous attempts at producing the appropriate construction:

(43) *Lo ponió. Ella lo pon, dió su suéter.

Lo	pon	-	ió.	Ella	lo	pon,	
3sgACL	put		3sgPAST	She	3sgACL	put	
d	-	ió	su	suéter			
give		3sgPAST	her	sweater			

(She) put it. She put it, (she) gave your sweater.

The dative and accusative clitics *se lo* 'to her it' are adjacent to each other in the adult Spanish structure *ella se lo está poniendo* 'she is putting on you (the sweater)'. In (43) María Angélica cliticized the 3sg accusative clitic *lo* 'him' to preverbal position. This cliticization should have triggered the cliticization of *se* 'to you', but she paused, perhaps realizing that the indirect object was not included and made a second attempt. In her second attempt, she included the subject *ella* 'she', but did not fully inflect the verb. In her third attempt, she used the ditransitive verb *dar* 'to give' and included the DP *su suéter* 'your sweater'. The result, as well as the previous ones, was ungrammatical. Thus, María Angélica through her attempts to produce the appropriate VP showed her 'awareness' of the absence of the indirect object from her constructions, but that she could not provide it since she had not acquired *se* the allomorph of the 2sg dative clitic *le* 'to you'.

I suggest that it is the similarity between the 2sg dative clitic *le* 'to you' and 3sg dative clitic *le* 'to her' that was delaying María Angélica's acquisition of the 2sg dative clitic *le*, since she did not produce it in any of the required contexts. However, she produced *le*

'to her' in one of the required contexts. Ervin, who was at the beginning interlanguage level, did not produce this dative clitic either. Interestingly, Säqche' of the same group did produce *le* 'to you'. This shows variation in the acquisition of *le* 'to you' within the same interlanguage level. Finally, María Angélica, Säqche' and Ervin generalized the past tense form of the verb *poner* 'to put' as *ponió*, but the correct form is *puso*. Thus, these three children had not yet acquired *puso*, which is the irregular past tense form of this verb.

María Angélica, Ervin and Ixb'alam hypothesized erroneously that the Kaqchikel verb root *-elesaj* 'to take off/out' corresponded to either the Spanish verbs *sacar* 'to take out/away' and *quitar* 'to take off'. Ervin and Ixb'alam used *sacar* 'to take out/bring out' and *quitar* 'to take off' interchangeably, while María Angélica only used the verb *sacar*. The examples in (44) are pragmatically odd because of the children used the verb *sacar*. The adult form for the examples in (45a-b) is *ella le quito el suéter* 'she took off the sweater (off you)' and for (45c) is *tú me quitaste el suéter* 'you took off the sweater (off me), in which *tú* 'you' and the clitic *te* 'to you' are informal forms.

(44) a. *Ella sacó su suéter.

Ella sac - ó su suéter.

She take out 3sgPAST your sweater

She took out your sweater.

b. (?)Le sacó el suéter.

Le sac - ó el suéter

2sgDCL take out 3sgPAST the sweater

(She) took out the sweater for you.

c. *Sacaste mi suéter.

Sac - aste mi suéter

take out 2sgPAST my sweater

(You) took out my sweater.

The essential difference between these children is that Ixb'alam cliticized the expected dative clitic *le* 'to you' and, as expected, did not assign genitive case to the direct object *el suéter* 'the sweater'. In comparison, María Angélica and Ervin failed to cliticize *le* or *te* and assigned genitive case to *su suéter* 'your sweater'. The essential similarity between these children is that they produced constructions that were semantically and pragmatically odd. All three children showed various degrees of semantic transference from Kaqchikel by using the Spanish verb *sacar* 'to take out' and not the verb *quitar* 'to take off'.

Table 4.7 indicates that all the children constructed some VP's with the wrong dative clitic (*DCL). The majority of these ungrammatical constructions were of two types: (1) an accusative clitic was used instead of a dative clitic and (2) the formal 3sg dative clitic *le* 'to you' was used instead of the 3pl dative clitic *les* 'to them'. María Angélica, Ervin,

Yaxum and Tojil made the first type of error. The examples in (45) are from María Angélica and Yaxum:

(45) a. *Lo dió un beso ella.

Lo d - ió un beso, ella

3sgACL give 3sgPAST a kiss she

(She) gave-it a kiss, she.

b. *Los dío un beso.

Los d - ió un beso

3plACL give 2sgPAST a kiss

(You) gave them a kiss.

María Angélica, in (45a), cliticized the masculine 3sg accusative *lo* 'him/it' rather than the formal 2sg dative clitic *le* 'to you'. She also produced the pronoun *ella* 'she' for emphasis (cf. adult Spanish: *le dió un beso* '(she) gave you a kiss'). In (45b), Yaxum produced *los* 'them' rather than *nos* 'us' (cf. adult Spanish: *nos dió un beso* '(you) gave us a kiss'). It was discussed earlier that Yaxum had problems with the clitic *nos* 'us' (see example 34).

Interestingly, Tojil, Yaxum's brother made a similar error at describing the same event, but repaired this error by producing another structure immediately after the first one:

(46) *A los dos los dío un beso. A los dos nos dío un beso, dos besos.

A	los	dos	los	di -	ó	un	beso
to	the	two	3sgACL	give	3sgPAST	a	kiss
A	los	dos	nos	di -	ó	un	beso,
to	the	two	1plDCL	give	3sgPAST	a	kiss
dos	besos						
two	kisses						

(You) gave them a kiss. You gave us a kiss, two kisses.

Tojil's first structure was ungrammatical because the 3pl accusative clitic *los* 'them' was erroneously cliticized; however, his second structure was grammatical because the expected 1pl dative clitic *nos* was cliticized. Moreover, he corrected the plurality of the direct object. He inflected *un beso* 'a kiss' into its plural form *dos besos* 'two kisses' and right-adjoined it to the VP. Thus, the examples in (45b) and (46) suggest that the 3pl clitic *los* 'them' is acquired before the 1pl clitic *nos* 'us', and that for a while *los* functions as both *los* 'to them' and *nos* 'to them'. These data also suggest that Tojil and Yaxum, who are siblings, represented different levels of acquisition; Yaxum had not yet acquired the clitic *nos*, whereas Tojil was still in the process of acquiring it. Additionally, the data from María Angélica suggest that she was sorting out between the different properties of the accusative clitic *lo* 'him', the dative clitic *le* 'to him' and the dative clitic *le* 'to you'.

Turning to second type of incorrect dative cliticization, the children commonly cliticized the singular dative form *le* 'to him/it' rather than the

plural counterpart *les* 'to them'. In (48), I illustrate the adult Spanish versions of the VPs that were elicited. The cliticization of the 3pl dative clitic *les* 'to them' was required and expected, as well as agreement between the PP and the clitic. In (48a-b) *les* 'to them' agrees with its indirect object in the PP *a los cerdos* 'to the pigs'. The dative clitic *les* 'to them' also agrees with the PP *a sus hijos* 'to their sons' in (48c).

(47) a. Los niños les dan comida a los cerdos.
The boys give them food, to the pigs.

b. El niño les da comida a los cerdos.
The boy gives them food, to the pigs.

c. Las mamás les lavan la cara a sus hijos.
The mothers wash them, the face of their sons.

Eighty percent of the children consistently cliticized the 3sg dative clitic *le* 'to him/it' erroneously, except for Tojil who cliticized *les* 'to them' once in a similar structure to that of (48c). I suggest that the lack of pluralization of the dative clitics illustrated in (48) was rooted in L1. The equivalent Kaqchikel constructions do not indicate plurality; e.g., *aq* may mean 'pig' or 'pigs' depending on the context. The children from the beginning and intermediate interlanguage levels hypothesized that the nonplurality of Kaqchikel nouns that refer to animals carried over to the Spanish DP; thus, the corresponding clitic was produced in its singular form. Advanced children such as Ixmukane and Ixb'alam pluralized the DP in the PP, but did not pluralize the dative clitic. The case of human indirect objects is less problematic, partly because they can be pluralized in Kaqchikel, although the beginning level

children did not pluralize them consistently. Therefore, only the advanced children had acquired number agreement for DP's, but none of the children had yet acquired number agreement between the DP's and their corresponding clitics.

As mentioned previously, the children in general had problems with number agreement, just as they did with gender agreement and those who especially had problems pluralizing DP's were from the beginning and intermediate groups. The following examples are from Ervin and Tojil:

(48) a. *Le están dando comida a los cerdo.
Le est - án d - ando a los cerdo
3sgDCL be 3plPRES give PROG to the pig
(They) are giving it, food to the pig.

b. *Esas dos señoras están peinando a sus mamá.
Esas dos señoras est - án pein - ando
those two women be 3plPRES comb PROG
a sus mamá
to their mom
Those two women are combing their mom.

In (48a), Ervin produced the 3sg dative clitic *le* 'to him/it' rather than the 3pl clitic *les* 'to them'. The clitic *le* does not agree with his DP *los cerdo* 'the pig', whose masculine and plural determiner *los* 'the' is does not agree with the singular noun *cerdo* 'pig' (cf. adult Spanish form *los cerdos* 'the pigs'). Ervin was able to pluralize the determiner, but not the noun. Similarly, Tojil in (48b) produced the DP *sus mamá* 'their mom', in which the noun *mamá* needed to be pluralized (cf. adult Spanish: *sus mamás* 'their mothers'). The patterns of agreement of Ervin and Tojil were not exclusive to them,

other children from the non-advanced levels produced similar patterns. That is, they pluralized the determiner, but not the plural noun. Thus, these children were still in the process of acquiring number agreement in Spanish.

Interestingly, these children did not produce the opposite combination. In other words, they did not produce a singular determiner and a plural noun; however, they produced a singular determiner and a singular noun, rather than its plural counterpart; for instance Säqche' produced the following ungrammatical structure:

(49) *Lo están cariñando el perro, los dos.

Lo	est - án	cariñ - ando	el	perro		
3sgACL	be 3plPRES	caress PROG	the	dog		
los	dos					
the	two					

(They) are petting the dog, the two.

Säqche' cliticized the 3sg accusative clitic *lo* 'him' rather than the plural counterpart *los* 'them'. He created the verb from the noun *cariño* 'endearment'. The clitic *lo* is doubled by the singular DP *el perro* 'the dog' rather than by the expected plural DP *los perros* 'the dogs'. It is clear that he became aware of this error and attempted to repair it by adjoining the DP *los dos* 'the two', which quantifies and indirectly pluralized the DP *el perro* 'the dog'. However, he did not attempt to make the clitic agree with the DP *los dos*.

Yaxum produced a similar type of repair. The examples in (50) were produced to describe a drawing in which two boys were feeding two pigs (cf. adult Spanish form in 47a). He produced his first sentence with the

3sg dative clitic *le* and the singular DP in the PP *al cerdo* 'to the pig'. Moeover, Yaxum repaired his previous sentence with one that included the appropriate plural DP in the PP *a los dos cerdos* 'to the two pigs'; however, he failed to provide the 3pl dative clitic *les*.

(50) Dos niños le están dando de comer al cerdo.
Two boys are giving food to the pig.
*Los dos niños le están dando de comer a los dos cerdos.
The two boys are giving food to the two pigs.

In sum, except for Tojil who produced the clitic *les* 'to them' once, 87 percent of the children failed at producing the 3pl dative clitic *les* 'to them'. Furthermore, 75 percent of them, excluding Ixb'alam and Ixmukane, had not acquired pluralization forms of nouns for animal-objects. These data provides more evidence that the beginning and intermediate children were still acquiring DP agreement and that none of the children had acquired plural agreement between a nonplural nonhuman DP (in a PP) and its corresponding dative clitic *les* 'to them'.

Table 4.8 indicates that incomplete clitic structures (*ICLC), which consisted of the absence of the direct or indirect object, were infrequent. Only María Angélica and Tojil produced these types of VPs:

(51) a. *Me está poniendo.

Lo est - á pon - iendo

3sgACL be 3sgPRES put PROG

(She) is putting on me...

b. *Le está cortando su pelo.

Le est - á cort - ando

3sgDCL be 3sgPRES cut PROG

su pelo

his hair

(He) is cutting his hair.

Tojil's (51a) was ungrammatical because he failed to include the direct object either as the DP *el suéter* 'the sweater' or as its corresponding clitic *lo* 'it' (cf. adult Spanish: *me lo está poniendo* '(she) is putting it on me (the sweater'). María Angélica's (51b) was ungrammatical because she failed to include the PP *al niño* 'to the boy' that corresponds to the 3sg dative clitic *le* (cf. adult Spanish: *le está cortando el pelo al niño* '(he) is cutting the hair to the boy'). In addition, she again transferred the Kaqchikel requirement that the direct object *el pelo* 'the hair' be marked with genitive case. Thus, the exclusion of the direct or indirect object was a rare error.

Turning to the issue of transference, I have discussed transference from L1 to L2 in terms of the transference of the properties of Kaqchikel verbs, as well as the genitive case marking of DPs, especially those that refer to body- parts. However, here, and as I indicated on the tables of this chapter, I consider only that data which illustrates what I call 'direct transference'. That is, the child produced a Kaqchikel

structure while being interviewed in Spanish. Säqche' was the only child who transferred directly from L1 onto L2.

(52) Xuya' chito pa nuwi'.
She gave (a) kiss on my head.
(Cf. adult Spanish: usted me dió un beso en la cabeza 'you gave me a kiss on the head'

Säqche' produced the Kaqchikel structure in (52) was produced to describe my action of kissing him on the head. He used the ERG3sg prefix *u-* rather than the 2sgERG *a-* as if he intended to mark a distance between him and me. It is important to note that all the lexemes are Kaqchikel, except for *chito*, which comes from Spanish *besito* 'little kiss'. *Chito* 'little kiss' has undergone initial syllable deletion and affrication of the fricative [s]. I was informed that *chito* is a common lexical item for Kaqchikel speakers. Thus, the example in (52) shows that Säqche' was not constructing Spanish VPs based on UG, but based on L1.

Regarding accusative clitic constructions (ACL), table 4.8 shows that Tojil and Ixb'alam used grammatical accusative constructions rather than dative ones. Tojil used the transitive verb *besar* 'to kiss', which I expected, but he was the only one who used it. The other children used the verb *dar* 'to give'. In contrast, Ixb'alam produced the transitive verb *bañar* 'to bathe' rather than the expected ditransitive verb *lavar* 'to wash'.

(53) a. Me está besando.

Me est - á bes - ando

1sgACL be 3sgPRES kiss PROG

(You) are kissing me.

b. Está bañandolo.

Est - á bañ - ando - lo

be 3sgPRES bathe PROG 3sgACL

(She) is bathing him.

Tojil cliticized the 1sg accusative clitic *me* 'me' to pre-auxiliary position in (53a); his sentence is both grammatical and pragmatically acceptable. Ixb'alam in (53b) cliticized the masculine 3sg accusative clitic *lo* to postverbal position, which is grammatical as well. However, her sentence is pragmatically odd since the drawing that she was describing is of a mother washing the face of her child. Nonetheless, both children used appropriately accusative clitics rather than dative ones.

All the children produced grammatical dative constructions (DCL); the group's average was 61 percent. Table 4.8 indicates that Ixmukane produced the highest number of grammatical dative constructions, i.e., 87 percent of all tokens. In contrast, María Angélica and Ervin produced the fewest number of dative constructions, i.e., 30 percent of all tokens. Some examples of these grammatical dative constructions are:

(54) a. Me dió un beso.

Me	d -	ió	un	beso
1sgDCL	give	3sgPAST	a	kiss

(She) gave me a kiss.

b. Me lo pone.

Me	lo	pon -	e
1sgDCL	3sgACL	put	2sgPRES

(You) put it on me.

Ixb'alam in (54a) and Ixmukane in (54b) cliticized the 1sg dative clitic *me* 'to me' to preverbal position and both sentences in (54) are grammatical and pragmatically acceptable. Ixmukane in (54b) also cliticized *lo* to preverbal position, which is the allowed position. This clitic cannot precede the clitic *me* nor follow the verb. Except for María Angélica and Ervin, 75 percent of the children were able to produce this type of complex of construction.

In sum, the results on table 4.8 and the data analyzed in this section show that the children were at different interlanguage levels of dative clitic acquisition and that these levels, to various degrees, instantiated specific types of errors. The children at the beginning interlanguage level produced few dative clitics, whereas the children at the intermediate level produced more. The intermediate and advanced levels showed that dative cliticization was in the process of consolidation. An important difference between Ixb'alam and Ixmukane, who were at the advanced level, is that Ixmukane scored 87 percent, which was the highest percentage of the group. Ixmukane's high score correlates directly to her five years of schooling.

Finally, the data showed that the acquisition of verbs and their appropriate subcategorizations was crucial for the application of cliticization. For instance, the children at both the beginning and intermediate levels hypothesized that the Spanish verb *lavar* 'to wash' has the same properties as the Kaqchikel equivalent verb. However, Spanish *lavar* has ditransitive properties, which the children had not yet acquired. I suggest that the phenomenon of transferring the subcategorization properties of an equivalent verb from L1 to L2 is a grammatical feature of Kaqchikel-Maya children acquiring Spanish as a second language.